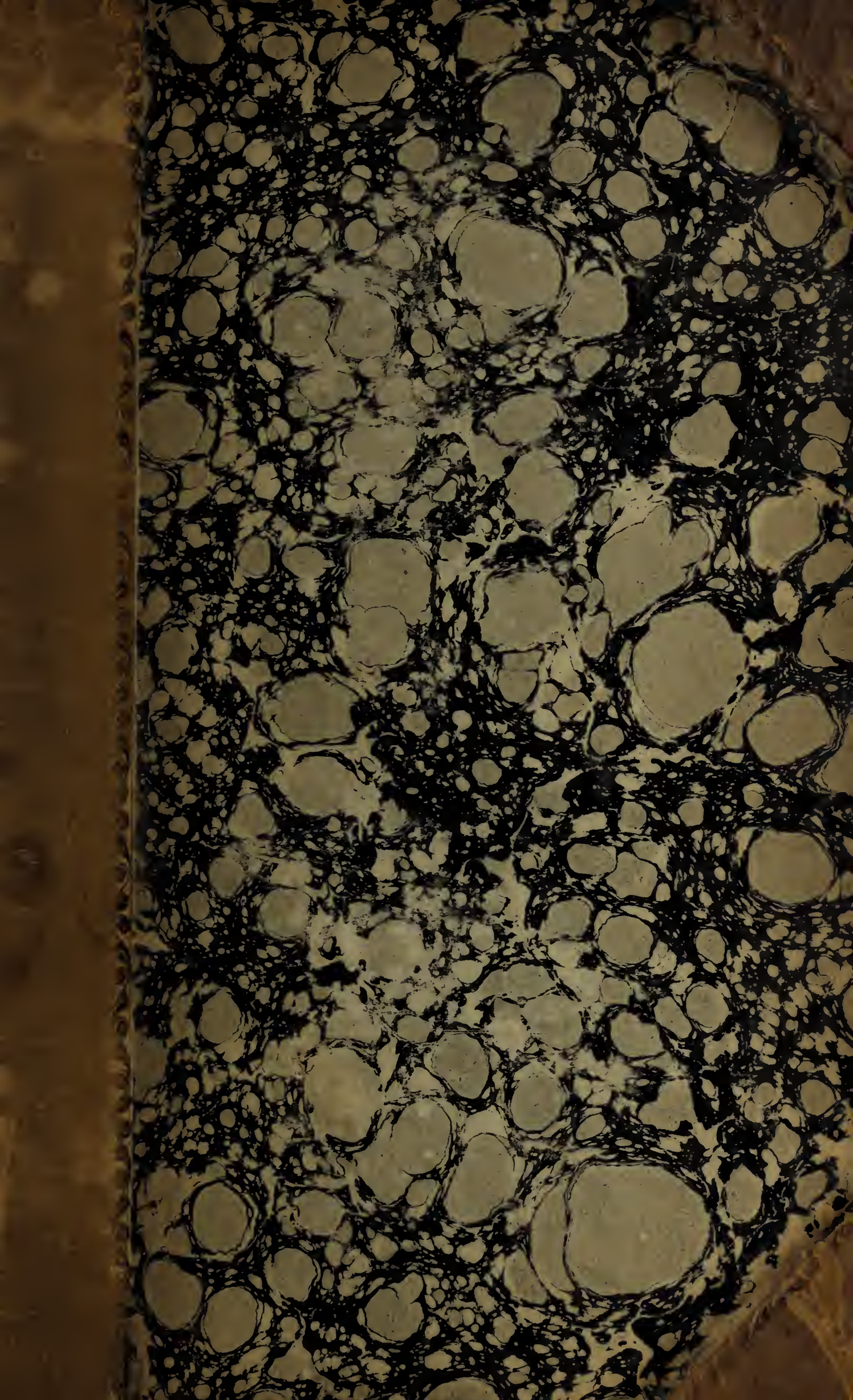

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THE

VETERINARIAN;

OR,

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FOR 1833.

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VOL. VI.—NEW SERIES.

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Ars Veterinaria post medicinam secunda est.—*Vegetius.*

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THE

VETERINARIAN.

VOL. VI. JANUARY, 1833. No. 61.

MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XXIV.

The Structure of the Lungs—The Pulmonary Capillary Circulation—The Change effected in the Blood—Catarrh in the Horse, Ox, and Dog—Chronic Cough.

OF the intimate structure of the lungs I have little to say to you, and that little far from satisfactory. They are the seat of the pulmonary circulation. They convey through their comparatively little bulk the blood, and all the fluids beside scarcely become blood, or soon separated from it, which traverse the whole of the frame. Then it is evident that they must contain innumerable bloodvessels, or, rather, that they must, in addition to the ramifications of the air-tubes, consist of a mass or congeries of bloodvessels, or the balance or equilibrium of the circulation could not be preserved. They do so: the only account which I can give you of the structure of the lungs is, that they consist of countless ramifications of air-tubes and bloodvessels connected together by intervening cellular substance.

In order to examine them, however, as minutely as I can, I take the lungs of an ox; an animal in which they are considerably developed, and in which, from his quiet, regular way of living, they are generally not much disorganized. If you compare these specimens, taken from the horse, the dog, and the ox, you will immediately perceive how much more perfectly their structure is exhibited in the last, and for the reason that I have stated.

The Divisions of the Lungs.—The lungs form two distinct bodies, the right somewhat larger than the left; and they are divided from each other by that duplicature of the pleuræ which has been already described—the mediastinum. Each lung has the same structure, properties, and uses. Each of them is subdivided; the right lung consists of five lobes, the left of two. These divisions are different in our different patients, but for what physiological reason I am unable to tell. In the horse the right

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lung consists of three lobes, and the left of two; in the dog the right has five lobes and the left two, and these lobes are far more perfectly separated from each other than in the horse or the ox, for the separation commences even from the bronchial tubes. In the swine there are three lobes in the right side, or we may perhaps say that the right lung of the animal is divided into a great many lobes, for the smaller of the three is partially separated into numerous lobules, differing in number in different swine. The left lung consists of two lobes only, and the scissure between them is not very deep. The variations, then, have reference to the right lung—the left, in all our patients, has two divisions only. The principal intention of these divisions is probably to adapt the substance of the lungs to the form of the cavity in which they are placed, and to enable them more perfectly to occupy and fill the thorax.

The external Form of the Lungs.—The lungs are suspended from the spine by means of their bloodvessels, the bifurcation of the bronchiæ, and the mediastinum. Their figure is irregular, elongated, flattened, pyramidical; broad and concave posteriorly where they are in contact with the convex surface of the diaphragm; and narrower, and approaching to a point anteriorly, where the cavity of the thorax narrows. We recognize in each three surfaces, the costal, the diaphragmatic, and the mediastinal. The convexity of the costal accommodates itself to the concavity of the ribs; the concavity of the diaphragmatic surface answers to the convexity of the diaphragm, and the mediastinum adapts itself to the irregular surface to which it is exposed. The rounded borders, superiorly, fill the longitudinal cavity or sulcus on each side of the dorsal vertebræ; the narrower borders inferiorly bend towards each other, and enclose the apex of the heart; the posterior borders follow the curvature of the diaphragm, and constitute the base of the lungs. The lungs are enveloped, as I have already described, by duplicatures of the pleuræ.

The internal Structure.—We cut into one of the lobes, and we find it separated into numerous irregularly-formed compartments, to which anatomists have given the name of *lobules* or little lobes. They are separated from each other by cellular membrane. They are distinct from each other; and they are impervious, except through the medium of the air-tubes and bloodvessels which pass into and through them. We examine them more closely, and we can subdivide them, and almost without end: we have smaller lobuli, each surrounded by cellular membrane, each distinct from and having no communication with its fellows. The consideration of some of the diseases of the lungs, and particularly *broken wind*, will convince us of the independence of, or

want of communication between, these lobuli. Broken wind is the unnatural running together of several of them.

The Minute Lobuli.—To these lobuli we have traced the ramifications of the bronchial tubes, but no one has demonstrated their entrance into them, nor the actual structure of these minute and ultimate subdivisions of the substance of the lungs. There has been many an ingenious theory about it, and we have been favoured with one or two very pretty diagrams of the bunch-of-grape-like terminations of the air-tubes. They probably have some such termination, but we have no ocular demonstration of it.

The Ramifications of the Bloodvessels.—An account of the bloodvessels of the lungs belongs to the circulatory system, but I may say at present that the pulmonary artery (artery we term it, for it proceeds from the heart, although it discharges the office of a vein by carrying black blood) arises from the right ventricle of the heart; it winds towards the root of the left lung, and there, at the bifurcation of the trachea, divides into two trunks, one of which penetrates each of the lungs. It very soon subdivides, following the divisions of the bronchiæ; it multiplies its ramifications as these tubes are multiplied; and it may be traced in company with them to the lobules which I have just described. Some successful injections have enabled us to trace them further, for the fluid has returned by the pulmonary veins. It has traversed these lobules, and has been conveyed back again towards the heart. We do, in point of fact, find other vessels of different structure returning blood from the lobules. We call them veins, because they go to the heart; but they discharge the function of arteries by carrying red blood. They are minute at first; but they anastomose with and fall into each other, until they assume a decided character, and constitute the branches and the trunk of the pulmonary veins which empty themselves into the left auricle of the heart.

The Alteration of the Blood in the Lungs.—Gentlemen, I here feel the inconvenience of the plan, which, for the accommodation of some of you who had attended my lectures on the sensorial and circulatory systems, I have in the present session adopted. Many of you have heard nothing of the mechanism of the circulation of the blood, nor the changes which are effected in that fluid, as it traverses certain vessels or certain parts; and therefore I am reluctantly compelled to confine myself to the simple statement, that the change produced as the blood circulates through the capillaries of the lungs is precisely the reverse of that which takes place in the capillaries of the other parts of the frame. In the general capillary system, the blood is changed from red to

black, from arterial to venous, from vital to effete. In the capillary system of the lungs, the blood is changed from black to red; it is enabled again to furnish the materials for the various secretions; it conveys the principle of nutrition to every organ, and it also communicates to each organ that impulse or stimulus which enables it to discharge its function. This all-important change is effected through the medium of the atmospheric air, for we can trace it along the bronchiæ to these lobules, and we have no doubt that it enters them. The delicate membranes forming the parietes of the bloodvessels, and the lining, or the wall of these lobuli, although impervious to the air in its compound form, suffer some of its principles to permeate them, and especially when urged by the strong power of affinity; and the oxygen of the atmosphere attracts and combines with a portion of the superabundant carbon of the blood, and the expired air is poisoned with carbonic acid gas; while some of the constituents of the blood attract another portion of the oxygen of the air, which combines with that fluid, and probably gives its distinguishing character and properties as arterial blood.

This, until we have inquired, as we should before have done, and in future will do, into the nature and properties of the blood, is all that I say of the changes produced by the process of respiration.

The Arterial and Venous Circulations.—Then, gentlemen, it is evident that the circulation of arterial blood has its commencement in the capillaries of the lungs, and its termination in those of the frame generally. The venous blood begins to flow in the general capillaries, and terminates in the capillaries of the lungs. These systems are independent of each other; the fluid is essentially different; the vessels by which it is conveyed are different; but they communicate at these points, and, as I shall have occasion to shew, the capillaries (too much neglected in our dissections and our inquiries) are by far the most important portions of the circulation. They are the origin and the termination of the two circulations, and in them the most important phenomena of life take place,—the change from arterial to venous and from venous to arterial blood.

The Fact of the Whole of the Blood traversing the Limbs accounted for.—Does it appear singular that the lungs alone should counterbalance the circulation of the whole body? Let it be remembered, that while the lungs consist of a congeries of bloodvessels, or are made up of them, this fluid is distributed very sparingly to many parts of the frame. The cellular membrane, and the ligament and tendons, have not much of it, and the

bones have still less; while the integument has scarcely any. This will materially lessen the comparative quantity. In the frame there are various circumstances of retardation; the vessels take a tortuous course—they run in opposite directions—they wander through many a gland, in which the blood is purposely delayed for the accomplishment of some important function: but the vessels of the lungs take a direct course; there is nothing to divert or to retard the current, so that a considerable portion of the blood which they contain enters the heart at each dilatation of the auricle, while a far smaller proportion of the blood of the frame generally is then received. That which is deficient in bulk is fully supplied by the directness and shortness of the course, and the rapidity of the current; beside, the lungs are close to the heart; all its power is felt by them, while the blood has begun to loiter in its course before it reaches many of the distant portions of the frame.

Transmitting the Whole of the Blood, the Lungs are easily inflamed and disorganized.—If, however, it is true that the pulmonary circulation counterbalances that of the whole frame beside, and even of that portion of itself which belongs to the general capillary system, we shall be enabled to account for the prevalence of disease in this organ above any other, and especially in that shamefully abused animal the horse. When we consider the extra labour of these vessels, which is so often required, in order to supply the increased consumption of arterialized blood in rapid progression; the irritation to which the membrane of the bronchial tubes is in some measure exposed, notwithstanding the guard of the larynx and the Schneiderian membrane, from contact for so many hours with the irritating and empoisoned air of a filthy stable; and more especially when we regard all the sympathies which such an organ must have with every other, and particularly the sympathy which daily experience tells us it has with the functions of the skin, and the discharge of the perspiration, sensible and insensible, can it be wondered at that it is so subject to inflammation, so difficult to subdue, and often so fatal? Inflammation is increased action of the capillary vessels; this organ is made up of them, and they become engorged, and the substance of the lung increases under inflammation with a rapidity unequalled in any other part. The walls of these vessels are exceedingly delicate; they are of a gossamer structure, in order to admit of the escape of the carbon, and the imbibition of the oxygen; and, when they are distended with blood, it is scarcely conceivable how soon it begins to filter through them. We hear it in the very act of filtering, if we apply our ears to the side of the animal; and it penetrates into the interstices of the cellular

tissue, and the whole substance is gorged and infiltrated. These considerations sufficiently explain the frequency, and obstinacy, and fatal termination of thoracic inflammation in the horse, and prepare us for that which, leaving for awhile our anatomical detail and our necessarily imperfect physiological inquiries, next presents itself to notice, namely, the diseases of these portions of the respiratory apparatus.

Catarrh in the Horse.

I have already directed your attention to inflammation of the Schneiderian membrane, or that which lines the nasal cavity. Coryza is attended by a slight defluxion from the nose; now and then a yet slighter weeping, and some increased labour of breathing, on account of the uneasiness which the animal experiences from the passage of the air over the naturally sensitive, and now more than usually irritable surface; and from the air passage being diminished by the thickening of the membrane; but when this is a simply local inflammation, attended by no loss of appetite or increased animal temperature, it may speedily pass over.

Symptoms of Catarrh.—In many cases, however, the inflammation of a membrane naturally so sensitive, and rendered so morbidly irritable by our absurd treatment, rapidly spreads, and involves the fauces, the lymphatic, and some of the salivary glands, the lymphatic glands of the lower jaw, and the throat, and the parotid gland, and also the membrane of the larynx. We have then increased discharge from the nose, greater redness of the pituitary membrane, more defluxion from the eyes, and loss of appetite from a degree of fever associating itself with the local affection, or apparent loss of appetite from pain in swallowing, and if the animal feels this he will never eat. Cough now appears more or less frequent or painful, referable generally to the upper respiratory passages; but no great degree of fever or acceleration of the pulse, or heaving of the flanks; there is, however, more or less defluxion from the eyes.

Causes of Catarrh.—Catarrh may arise from a thousand causes. Membranes subjected to so many sources of irritation soon become irritable. Exposure to cold or rain, change of stable, change of weather, neglect of grooming, change of the slightest portion of clothing,—many circumstances apparently trifling, and which they who are unaccustomed to horses would think could not possibly produce injurious effect, are the causes of catarrh. When there is any thing about the animal that favours this general febrile action or local determination, catarrh can scarcely be avoided. In the spring of the year, and while moulting, almost every young horse has a cough; and in the

dealers' stables, where the process of making up the horses for sale is carrying on, there is scarcely one of them that does not cough.

Treatment.—In the majority of cases, a few warm mashes, warm clothing, and a *warm stable,* a fever-ball or two, with a drachm of aloes in each, and a little antimony at night (in almost any of its combinations, but of which the antimonial powder is probably the best), will usually set all right. Indeed, all would soon be right without any of our medicine; and much more speedily and perfectly than if we had foolishly given those cordials of which grooms and farriers are so fond.

Caution.—We are now approaching, gentlemen, a class of diseases, in the treatment of which a great deal of tact is required. You would do very wrong if you treated every case of common cold in this cavalier way; and you would be equally reprehensible, and get into sad disrepute with your employers, if you made a serious business of these every-day complaints. Your duty to your employer will lead you to adopt every proper measure to prevent the malady from increasing, and to restore health as speedily and with as little expense as you can; and, on the other hand, the duty which you owe to yourselves, the preservation of your professional reputation, will urge you, while you do not make an unnecessary or palpable job of the case, yet never to hazard the occurrence of a worse disease by apparent or real negligence. Nineteen horses out of twenty with common catarrh will do well; but in the twentieth case, a neglected cough may be the precursor of bronchitis, pneumonia, and death. Then, although you may not do much, you will always ponder the case well. If there is no acceleration of pulse, no heat of mouth, or redness of nasal membranes, or soreness of throat, or loss of appetite, you may tread the ground lightly, especially if the owner is a niggard. But you must make yourself sure of all this; you must remember with what kind of animal you have to do, and to what a sad degree he may be predisposed to serious thoracic affection. You must recollect, and experience will soon convince you of this, how insidiously these chest complaints creep on, and how frequently inflammation is established before you are aware of its existence. If there is the least fever, bleed. The surgeon would never be justified who suffers a common cold, attended with heat of mouth or indisposition to food, to pass without the abstraction of blood. You need not make your patient quite a sick horse, but you should be always on your guard.

Caution against Physic.—Never give a physic-ball in catarrh. Let no wish of the master or the groom induce you to do it. You know not what sympathy may exist between the portion of mem-

brane already affected, and the mucous membranes generally; and I shall have again and again to prove to you that in severe thoracic affection, or in that which may soon become so, a dose of physic would be a dose of poison. There are few more fatal, and I am sorry to say more frequent instances of mal-practice than this. Thousands of horses are lost by physicking under catarrh. Some of my young friends saw with me a case, a few days ago, in which a horse was murdered by the administration of a dose of physic under what appeared to be common cold.

Treatment resumed.—If, however, careful investigation assures us that there is no affection of the lungs, that the disease has not proceeded beyond the fauces, we may with advantage unite *small* doses of aloes to our nitre, emetic tartar, and digitalis. To evacuate the intestinal canal, and to reduce the fæcal discharge to a pultaceous form, must ever be beneficial, if we so adjust our doses as to stop there; but if we proceed one step further, dangers environ us.

Sore Throat.—If catarrh is accompanied by sore throat; if the parotids should enlarge and become tender (there are no tonsils, *amygdalæ*, in the horse), or if the submaxillary glands should be inflamed and tender, and the horse should quid his food and gulp his water, this will be an additional reason for bleeding, and also for warm clothing and a comfortable stable. I do not mean a hot stable, in which the foul air is breathed over and over again, but a temperature some degrees above that of the external air, and where that determination to the skin and increased action of the exhalent vessels of the integument may take place, which in these cases are so desirable.

Liniments.—Some stimulating liniment may be applied over the inflamed gland, consisting of the turpentine tincture of cantharides diluted with five times its quantity of spermaceti or neat's-foot oil; strong enough to produce considerable irritation on the skin, but not to blister, or to destroy the hair. An embrocation sufficiently powerful, and yet that never destroys the hair, consists of equal parts of hartshorn, oil of turpentine, and camphorated spirit, with a sixth part of laudanum.

Catarrh, or Hoose in Cattle.

Cattle, and particularly cows, are very subject to catarrh. They are so when most judiciously treated, and especially those that are highly bred, and bred for several generations *in and in.* This produces a delicacy of frame and constitution, which renders them unable to struggle with any kind of hardship. When cattle are crowded together, they are seldom without hoose. I have seen the vapour produced by their perspiration steaming

from them hour after hour; the cow-house has been heated many a degree above the surrounding air; but this has been neglected and scarcely observed, because the fæces of this animal have no offensive smell, and the urine is comparatively devoid of ammonia. The cows are then let out for an hour or two to grass, or to water, when they inevitably take cold.

The negligence of the owner.—I know not any disease by which cattle are so seriously injured, or which is eventually so fatal to them, as hoose or cough, yet neither the herdsman nor the owner pays any attention to it. The animal may cough from week to week, and no one takes notice of it, until the quantity of milk is seriously decreasing or the cow rapidly losing flesh, and then, medical treatment will generally be unavailing. The disease has reached the chest, the lungs are seriously affected, and the foundation is laid for confirmed hoose or phthisis.

Hoose often caught at straw yard.—Many a sad and, eventually, fatal cold is taken at straw-yard, and particularly by young cattle. The food is scanty—not sufficient to afford proper nourishment, or to keep up the natural warmth; and the more forward drive the others about, and scarcely permit them to obtain a fourth part of their share. The depressing effects of cold and wet, and hunger and fear, so debilitate these poor beasts, that the slightest catarrh fastens upon them, and produces serious and often irremediable pulmonary affection.

Treatment.—You should bleed in catarrh, if there is the slightest degree of fever. You should remember the inflammatory character which almost every complaint speedily assumes in these animals, and the uniform violence of the fever if it is once suffered to get head. The horse is rarely subject to any disease, that in the speed with which it runs its course, and its frequent fatality, bears the slightest resemblance to the inflammatory fever of cattle.

Having bled, you would certainly physic, for you have an aperient which, although comparatively inert in the horse, is certain and mild and safe in its operation on cattle; I mean the Epsom salts. The medium dose is a pound. Fever medicine should follow the action of the purgative, composed of the same drugs, but administered in half the quantity; and to this should be added warmth, warm mashes, warm drinks, warm gruels, and a warm but well-ventilated cow-house.

Catarrh in the Dog.

Dogs, and especially those that are petted, are subject to frequent cough and catarrh. The disease assumes, according to circumstances, two very different forms, requiring a material dif-

ference of treatment. Sometimes there is a husky cough, not to so great a degree as in distemper, but followed by the same apparent effort to get something from the throat,—the same attempt to vomit,—and the ejection of a small quantity of mucus, either simply frothy or discoloured with bile. This proceeds from obstruction of some of the air passages, and, oftenest, of the superior ones. An emetic will clear the fauces, and the violent pressure on the thoracic viscera will force out a portion of the spume that clogs the bronchial tubes. Cough of this kind, and attended, as is generally the case, by little fever, requires nothing more for its cure than the exhibition of a few mild emetics; and the emetic for the dog, surest and safest in its operation, consists of equal portions of calomel and emetic tartar, and given in doses varying from half a grain to one grain and a half of each.

The harsh hollow cough is attended by more inflammatory action. Emetics are useless here. The depleting system must be pursued. This cough, so loud and so harsh, will yield only to the lancet and purgatives, assisted by sedative medicines composed of nitre, antimonial powder, and digitalis. An opiate (the syrup of white poppies) given at night will often be useful.

Chronic Cough.

Cough in all our patients becomes occasionally chronic. This is the occasional sequela of simple catarrh, but much oftener of an acute disease of some portion of the respiratory apparatus; it is especially the consequence of pneumonia and bronchitis. It continues weeks, and months, and years, or even during the life of the animal; and it is aggravated by every change of weather, and exposure to cold. It is sometimes connected with other diseases, as worms, but oftener it is found when the animal is otherwise in perfect health and full condition, and the breathing undisturbed. It is heard when he first begins to stir in the morning, when he drinks, or when he is first taken from the stable into the cold air. Weeks and months pass, and it does not seem to be followed by any bad consequence; but it indicates irritability somewhere—a predisposition to take on inflammatory action;—and, if the animal is closely watched, the cough will be evidently aggravated, and even serious inflammation of some portion of the respiratory tubes will be produced by causes which would not affect another horse. It is often a nuisance to the rider, and it is extremely unpleasant in the stable.

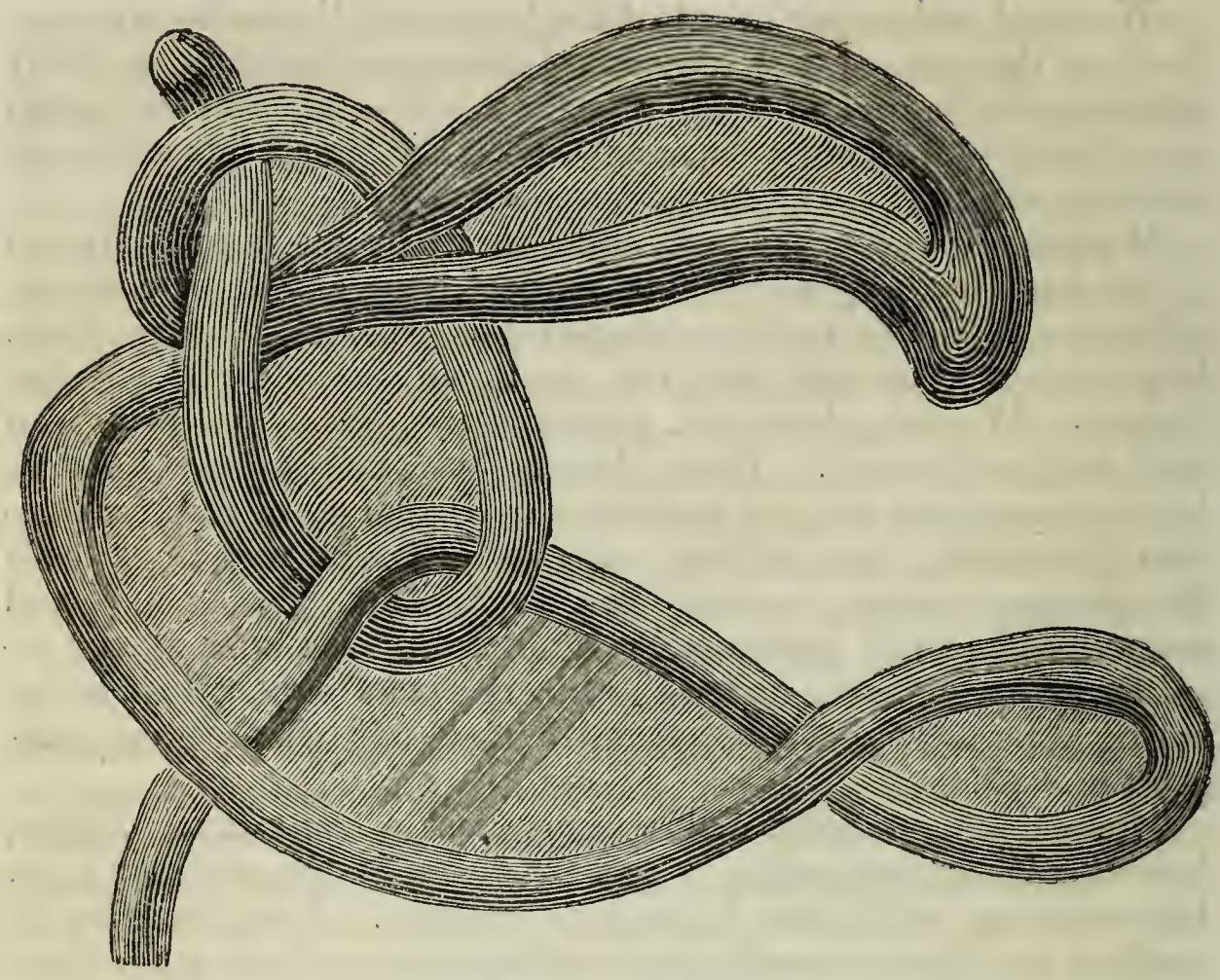
Treatment.—How shall we get rid of it? Ay, there is the rub. It is unaffected by the means which we should adopt in common catarrh; it is one of those chronic irritations over which depletion has no power.

We must endeavour to get at the history of the case—we must find out the seat of the previous disease—we must particularly observe whether the wind is perfectly sound—whether the cough is aggravated by sudden exertion—whether pain is felt when we press on any part of the trachea or larynx.

If we can fix upon the part, there may be some hope. An external stimulus, applied in good earnest, may act as a counter-irritant. If the seat of the complaint is obscure, we have little to guide our treatment, and the result will probably be unsatisfactory. We may, however, attend to the diet. We may feed well, but not too well. These chronic local irritations will sometimes cease when we can produce a healthy state of the constitution generally; but debility may in different ways, yet with almost equal power, increase the complaint. Carrots, a mild and nutritious food and particularly salutary in affections of the respiratory organs, may be tried; or a six weeks' run at grass in the spring, a better, far better, alterative than our whole pharmacopœia affords.

If these fail, medicine will be generally thrown away. I have, however, seen good effect from half doses of the common fever ball made up with green Barbadoes naphtha. I am far from regarding this mineral production as the panacea which some have represented it to be, but I have seen it, and not unfrequently, useful here.

Chronic Cough in Cattle.—Chronic hoose in cattle is a serious complaint. The beast that labours under it rarely fattens kindly, and it is too frequently the foundation of pulmonary consumption. This disease is principally, or almost always, referable to the lungs, and mostly to the bronchial passages in these animals, and should be treated with half doses of the medicine that was recommended for catarrh, and combined with the naphtha. The case should not be abandoned while the affection is confined to the lungs; but when other organs begin to be involved, and particularly when dysentery accompanies chronic hoose, all hope is fled.



A CASE OF STRANGULATION OF THE SMALL INTESTINES.

By Mr. W. C. Spooner, *Blandford.*

Sometime since, I was requested early in the morning to attend a brood mare, the property of E. B. Portman, Esq. M.P., that had been taken ill at grass during the night. The mare discovered symptoms of the most violent cholic, for which antispasmodic and aperient medicines were immediately administered; in addition to which she was bled. In a few hours, the pulse, which had before been moderate, became much accelerated, and the symptoms of acute enteritis supervened: for this the most active antiphlogistic treatment was put in request, but without avail, as the mare died in the evening, not having had a momentary relief from pain.

Post-mortem examination discovered the small intestines to be completely black from inflammation; blood was suffused on their internal surfaces, and mixed with their contents; and about four feet from the pyloric orifice of the stomach they presented the appearance endeavoured to be shewn by the above sketch. The bowels were loosened in order to shew better the entanglement of the intestines, which of course were drawn into a tight knot, and completely intercepted all passage.

ON CHOKING IN HORSES AND CATTLE.

By Mr. King, *V.S., Stanmore.*

Gentlemen,

Having noticed in your periodical an expressed wish for the communication of cases, it occurred to me that the following statements might not be altogether devoid of interest to junior country practitioners. The subject is that of Choking, and in the horse more particularly; but as my practice has given me opportunities of meeting with the same accidents in cattle, I shall not altogether neglect that part of veterinary surgery. When I say country practitioners, I believe they are more likely to meet with such cases than the residents in great towns and cities.

Choking is of very common occurrence, principally among old horses, whose molars are imperfect, and whose desire for food, on coming into the stable from work or pasture, prompts them to bolt their meat (generally dry corn) without sufficient preparation. When the animal has, which is not unfrequently the case, sent down one mouthful after another, till the whole œsophagus is distended to its utmost stretch, almost from the stomach to the throat, recovery is very rare. In such cases I have frequently endeavoured to pour down fluids; and, by pressing and agitating the œsophagus, to squeeze, by degrees, some of the liquid among the collected food, and it has occasionally answered. When the tube is so stuffed, the application of the probang can afford no chance of relief. I have seen Weiss's injecting apparatus, and think that in such cases it might be applied with advantage, as the power of the instrument appears likely to force the fluid amongst the collected mass with greater effect than could possibly be produced by its gravity, and the mere elevation of the head; but I have not yet had an opportunity of trying the instrument.

When, from the inconvenience arising to the animal from the stoppage, the horse has quickly discontinued feeding, and, on examination, there is reason to think that the principal obstruction is in that portion of the œsophagus which lies within the chest, liquids and the probang will generally relieve.

The symptoms are well known, viz. ineffectual attempts at deglutition; throwing all the parts connected with the act into the most painful and spasmodic contractions, often accompanied by an expressive squeak; and the return of saliva and all given fluids through the mouth and nose.

In illustration of this subject, I shall now relate a case or two which I have witnessed. I was, some years ago, as I was accidentally passing, called in to the horse of a coach proprietor. The owner said, his horse "had a bad sore throat, and could not swallow." He could not swallow; in fact, he did not even make an attempt, on severe compression. The history being, that he had worked and fed well the preceding day, and the œsophagus, as far as it could be examined, appearing without any obstruction, I did not suspect the real cause. He was blistered and drenched, but without any good effect; all the liquids returning without any effort to swallow. On the third day after I first saw him, he died. I much wished to ascertain the cause of the obstruction, which proved to be a large ball of tobacco—ashes wrapped up in a double paper, and which rested in the œsophagus, about half way between its entrance into the chest and the stomach. All knowledge of its having been given was stoutly denied; but it was afterwards confessed that the nostrum was exhibited as a supposed remedy for worms. Had I not trusted to the history of the attendants, I have every reason to think the probang would have relieved this horse, for, the substance having descended so far, a small power applied would have sent it on.

A cause of choking, and which has killed many horses, likewise exists in a notion that new-laid eggs will improve condition. I believe the practice is, previously to giving the egg, to star the shell in a few places; and when the shell has not been sufficiently weakened to yield to the pressure of the parts, the mischief ensues.

I was once called to a very violent horse with supposed sore throat. He had taken nothing for two days. The attendant swore *he* could not account for it; but as the animal had every general indication of health (the complaint excepted), I gave little credit to his statement. I had the horse brought to my stable, and, having properly secured him, passed the probang with, at first, some little resistance in the passage. On its return from the mouth, the bulb was literally covered with fragments of egg-shell. The horse was soon well. If this egg had not been weakened, I doubt whether the quiet introduction of the instrument would have broken it down in that situation.

I have heard of two cases in cattle practice, which I could depend on, where death took place, and the cause proved to be in each of them an egg plugging up the passage.

I am scribbling on—but if you think I have gone far enough, you must cut away or cauterize, which you like best.

A patient was brought to me late at night, that was said to be choked by a piece of Swedish turnip. He had all the symptoms

attending such cases; frequent attempts at deglutition, and sufficiently painful to produce profuse perspiration. I was on the point, as it was late, of passing the probang; but as I could not detect any obstructing body, and learning that frequent attempts had been made with a tar-rope for the removal of the turnip, I contented myself for the night with bleeding and blistering the throat and neck.

The morning found him better: fluids were at first administered, and with some difficulty; and for several days he could not swallow any thing solid and dry without evident pain. He ultimately did well. The symptoms here were, no doubt, brought on by the violent means which had been used producing, most probably, laceration of the membranes.

Choking in beasts, while stall feeding, is very common; but here, as before observed, if the contractile power of the canal is sufficient to propel the substance to a certain distance, the probang is sure to relieve, if properly applied. It is hardly credible that men should adopt such means, but I have known two farmers kill their beast by using a common rack-stave. One of the cases I only had the history of, but I can depend on it. The other I was called to attend. The rack stave had been in requisition, and the owner "*was sure he had passed the turnip, and the cow did swallow some given liquid.*" She would not attempt to take any thing voluntarily. I satisfied myself that fluids did pass, and I then thought it possible that a piece of the root might be so shaped as to allow of the passing of liquid.

The next day the symptoms were the same; there was no swelling of the neck of any amount, nor could any thing be felt externally. I confined the head, and passed the instrument, which went its full length into the stomach. About the third day from my first seeing her, she died; and it was found that the stave had slipped on the back side of the turnip, and made a considerable rent in the œsophagus sufficiently large to let the turnip out, and there it lay in the cellular membrane.

Your paper, I can easily imagine, will be occupied with mor valuable matter; but I am in your hands, and do with the tinge therefore as you please.

ON COWS NOT CLEANSING.

By Mr. W. A. Cartwright, *V.S., Whitchurch.*

It is a very common occurrence with cows, after they have calved, for the placenta or cleansing not to come away or sepa-

rate from the uterus: the consequence is, that excessive straining comes on to get rid of it; and if it is not voided, the cows gradually sink in flesh, become very weak, or, what is commonly called, "loin fallen;" and sometimes they die from irritative fever, exhaustion, &c. In some cows, from the continual straining, the bulk or vagina is protruded, dirtied, thickened, hardened, and otherwise injured: the parts around become highly inflamed; and, sometimes, an immense slough of the whole of the internal surface of the vagina takes place; the urinary passage also becomes impervious, the sides being quite grown together, and, of course, retention of the urine takes place. In addition to all this, after the cleansing has remained a few days, the os tincæ will be found so contracted, that the fore finger can scarcely be introduced into it, although at the same time a great portion of the cleansing remains confined in the uterus. My plan is to remove the afterbirth immediately after delivery. Often, however, it will be found, after premature labours, somewhat firmly attached to the burs of the uterus: in these and similar cases a little force may be used in separating it; or, if it is too firmly adherent, the surgeon may cut away all he can reach, and leave the remainder to slough off. If this plan is pursued, it will generally be found that *excessive* straining, which is sometimes seen, and which is brought on by the great bulk of the cleansing (part of it being in a putrid state), acting as an extraneous body, and which the constitution tries to rid itself of, may be in a great measure avoided.

I have given the chloride of lime in these cases, and have also injected it into the vagina with apparent benefit; but, I think, that what is injected should be a weak solution, and not too often used, lest it should produce an astringent effect, and be injurious. If the cleansing has been removed as above mentioned, nothing more will be required than merely to give a *little* cordial medicine once or twice a-day, and nature will do the rest; but, as to the large stimulating, and what are called cleansing drinks, and which are given for several days together immediately after calving, I consider them, in the majority of cases, highly dangerous, so long as the cleansing is firmly adherent.

I wish you, or some of your party, would write on the subject of preserving morbid and other preparations, as I am puzzled sometimes how to manage with them; or inform us of the best work on the subject.

A CASE OF NEPHRITIS.

By Mr. M. A. Naylor, *V.S. Wakefield.*

I do not remember having seen any case of nephritis recorded in The Veterinarian, and am therefore induced to extract one from my case-book, in the hope that some abler correspondent may take up the subject; or, at least, that it may elicit your valuable comments.

The subject of this report is a mountain pony, twelve hands high, coming three years old, and which the owner said had never been used, although it was shod. He had had it in his possession about a fortnight, and began to think that it was high time to make it a little serviceable.

He accordingly mounted it; but he had not proceeded more than a mile, when it began to give way under him. The little animal made many attempts to lie down; and it was not without much difficulty that it was got back into the stable. He immediately began to treat it as for gripes, being, as he said, accustomed to horses from his boyhood. He thought that his treatment relieved the animal; but the effect was not permanent, for the pony was continually pawing and lying down. In this state, with a few intervals of relief, the little animal continued more than a week, when the owner requested that I would see it. On questioning my employer further, I discovered that the day previous to his being ridden, the pony had been cast in the field, under some rails, between which he had got, and could not extricate himself, and that he had struggled there for sometime on his back, with his fore legs on one side, and his hinder legs on the other side of the rails.

August 19*th.*—I now first saw him. He was lying down, and his pulse was from 56 to 60. On getting up, he voided with much pain a small quantity of high-coloured urine, and the pulse was accelerated. When I pressed on the loins, he flinched almost to crouching; but there was no tenderness in the perinæum. I examined the bladder, which was empty. I administered three drachms of aloes, made into a drink, with the yolk of an egg and a little sweet oil, and repeated the dose in the evening, ordering bran mashes, and thin gruel.

20*th*, 7 a.m.—The bowels not yet acted upon. Pulse 58. Give aloes ʒiss, prepared in the same way.

7 p.m.—Pulse 62, considerably weaker; the animal in pain; breath fœtid; eats nothing. Give chloride of soda and spirit of nitrous æther, of each two drachms, in gruel.

21st, 7, A.M.—The bowels not yet opened. Animal easier; but pulse 70, and full. Abstracted five pounds of blood, when the pulse began to falter.

7 P.M.—Physic operating. Horn with gruel and linseed tea alternately.

22d.—Physic still operating. Pulse 58, and softer. Still eats nothing. Breath yet somewhat fœtid. Give of chloride of soda and powdered gum three drachms each, in gruel.

7 P.M.—Still purging. Has eaten a little green clover. Breath no longer fœtid, but the Schneiderian membrane begins to be highly injected, although the pulse has sunk to 50. Give three drachms of powdered gum, and half a drachm of emetic tartar. Urine still evacuated with pain.

23d.—Evacuates his urine in larger quantities, and with comparative ease. Still slightly purging. Pulse 44. Give powdered gum, three drachms, and powdered gentian, half a drachm.

24th.—Feeds well. Does not flinch when pressed on the loins. Bowels still relaxed.

25th.—Pulse healthy; and all other symptoms favourable.

27th.—Not feeding so well, but no return of the former symptoms. Bowels regular. Pulse 36. Give three drachms of powdered gum, and one of gentian, and remove some of the clothing, which had hitherto been warm, over the loins.

I saw the pony about twelve days afterwards. His general health seemed to be perfectly re-established, but he walked as if there was a kind of luxation of the hip-joint at every step.

Dec. 13*th.*—I have seen him again. He is perfectly sound, and as fat and fresh as ever.

CASES OF SPASMODIC ACTION OF THE DIAPHRAGM.

By Mr. S. Brown, *V.S., Melton Mowbray.*

On the night of the 2d of August, 1830, I was called up to attend a grey four-year-old mare, four miles from hence, which had been driven in a gig a distance of thirty-five miles during the day. The messenger informed me that the mare was ill with the colic, and that he had taken a gallon of blood from her, and put an onion in her barren, after which she staled, but she was not relieved by it. I put up a laxative mixture, composed of mass. cathar. ʒiv, dissolved in boiling water; ol. lini lbj, and liq. potassæ ʒii; and accompanied him back. On my arrival the

mare appeared in great agony, rolling, pawing, &c. with intervals of tranquility, and a slight appearance of lethargy. When standing, she occasionally elevated her head and depressed the back, a symptom which I have frequently observed in gastric affections, and one which I think characteristic of the disease. The pulse was a little accelerated.

On inquiry, I was informed that the mare was taken from grass in the morning, and that she had eaten three pecks of oats during the day. The mixture was given; soap introduced up the rectum, followed by clysters of warm water: friction was applied at intervals to the abdomen, &c. which did not afford any relief.

I then had her belly well rubbed with mustard, mixed with the oil of turpentine, and gave a clyster of tobacco smoke without any apparent benefit.

At six A.M. I abstracted lb.ii of blood, and directed the assistants to put an infusion of oatmeal within her reach; also to give clysters of warm water every hour, and to be kept without other food during the day: after which I left my patient, and sent the following laxative mixture; two drachms of Castile soap dissolved in boiling water, to which were gradually added ol. lini ℥xii, ol. croton. tiglii gutt. xxx, and which was given to her about nine A. M. with good effect.

On my visiting her in the evening, I was informed that the acute pain left her in about an hour after the medicine was given, and that she had been standing with her head in the manger most of the day, but had drank some of the infusion several times since I saw her. She was lethargic, and with a slow pulse. The infusion was continued, and no food allowed for the night.

In the morning of the third day I was informed that the mare was free from pain; but the people about her considered her worse, as a beating had commenced in the near side during the night, which might be heard at a considerable distance, and the person said that *it was just as if something was kicking her inside from the hip to the breast.* I was at some loss to account for this audible beating; however, on visiting my patient it was too manifest to be mistaken. The near side was convulsed, accompanied by a dull sound, which might be heard at several yards distance. On placing my hand over the heart, its action could not be clearly felt; but the beating proceeded from behind that organ, and was most perceptible as well as most distinctly traced to its source in the direction of the diaphragm. The jerks were from forty to forty-five in a minute, and, on shifting my hand to the abdomen, they apparently came from before, backwards.

The mare was standing, and appeared in other respects much better; her bowels were open, and the voided excrement consisted chiefly of unmasticated oats. I gave her muriatic acid and compound spirit of lavender very largely diluted with water, and I ordered small quantities of young grass to be put before her, which she ate with avidity.

4th.—Still purging whole oats; pulse and appetite pretty good. I was informed that the convulsive action ceased about three o'clock on the preceding day. The draught was repeated in the evening.

5th.—The purging had stopt; the pulse and appetite good, and the mare going on well. The medicine was given on the 6th; and on the 7th day she was turned out, and soon recovered her usual strength.

CASE II.

The subject of this attack was a bay horse, five years-old, which I was requested to attend on the 20th of August, 1831. I was from home, and the message left was, that "*the horse's body was jumping so that you might hear him across the yard.*" With this clue I put a dose of physic, and ammon. carb. ʒii, in my pocket, and hurried to see my patient. He was standing with his head a little elevated, but did not appear in much distress: his whole body was jerking; and, on examination, the symptoms were similar to those I have just described, except that they appeared on both sides with an additional corresponding convulsive respiration. The pulsations of the submaxillary artery were from fifty to fifty-five in a minute, and rather tremulous. On inquiry, I was informed that the horse had also been taken from grass the day before; that he was difficult to catch; and that the men had foolishly run him down. He had been bled before I saw him, but was not relieved by it. I gave him four drachms of the purging mass and two of carbonate of ammonia in solution, about five P. M., and soon after ten all was tranquil. I saw him in the evening of the 21st: the convulsions had ceased; his bowels were lax; the pulse nearly natural; and in two or three days he was quite well.

CASE III.

This was an aged bay-horse, the property of a gentleman whose residence is about six miles from Melton. Early on the morning of June the 11th, 1832, the horse was found in the field rolling about in great pain. He was taken home, and bled; after which they gave him some gin and ale; but, in consequence of that not affording any relief, my attendance

was requested about nine A. M. The horse appeared to be in great agony; rolling, pawing, &c. very violently: the pulse was about fifty, flowing in a full stream; his mouth was rather dry, which I attributed, in some measure, to the gin and ale. I gave him an antispasmodic mixture, and copious clysters of soap and water; friction was applied to the belly, &c. without any avail. About twelve o'clock, lb.vi of blood were abstracted, his belly stimulated with mustard and the oil of turpentine; and the infusion of tobacco given in a clyster; after which he voided two hard balls of excrement, covered with mucus. The pain, however, continued violent, and the following mixture was given: Dissolve two drachms of Castile soap in four ounces of boiling water, and gradually add twelve ounces of linseed oil, thirty drops of the croton oil, and half an ounce of laudanum. I desired the people about him to give clysters of warm water every hour until the pain was abated, and to place warm white-water before him; and if he was not relieved in three hours, to let me know.

I was informed in the morning of the 12th, that the horse was going on well; that he appeared free from pain, and became tranquil in about two hours after the medicine was given; also that he had drank some white water, and ate a mash in the night.

I called during the day, and found him standing, apparently free from abdominal pain, but he seemed to be languid; the pulse was irregular, and rather accelerated, with the bowels lax. Some anodyne fever medicine was given, and the white water and mashes continued.

During the next twenty-four hours his appetite and appearance had so much improved, that the gentleman considered any further attendance of mine unnecessary. In the afternoon, however, the servant heard a beating in the stable, but paid no attention to it, and left the horse until the evening, when he was alarmed by the increased noise and the violent working of the horse's body; and immediately came to fetch me. On my arrival the horse was lying on the off-side, evidently in the greatest distress; his whole body was jerking; and the jerking to be most distinctly traced in the direction of the diaphragm, as in the former cases. The pulsations of the submaxillary artery were scarcely perceptible, and the general appearance of the horse indicated a speedy dissolution. I left my patient, and sent two drachms of carbonate of ammonia, made into a ball with linseed meal and treacle, which was given between eleven and twelve o'clock; but death closed the scene soon afterwards. I was not present when the body was opened, but I was informed that the viscera were quite healthy.

The above are three well marked cases of spasmodic action of the diaphragm, and which will tend, in some measure, to settle a disputed point between Messrs. Nimrod, Smith, and Sewell; and they materially strengthen the position which your valuable correspondent (and, I may add, accurate observer), Mr. Castley has taken. In the first case, the mare had been driven slowly with a distended stomach; she had been just taken from grass, and had devoured no less than three pecks of oats. This weight of undigested matter limited, as well as rendered more laborious, the action of the diaphragm; and it was the mere labour, without rapid or extended action, which exhausted the muscle, and produced the tendency to spasm. I conceived that the first indication of cure was to give tone to a debilitated or, perhaps, inflamed stomach; and, in those cases of gastritis which have been intrusted to my care, the acidulated mixture has been singularly successful after the stomach and bowels have been evacuated by an aperient, while the natural powers of the animal economy were sufficient to restore an healthy action in the diaphragm.

In the second case, the horse had been living in a state of rest for some time, and was forced to sudden and violent exertion with his stomach and bowels full of grass. But in the third case, the animal had been regularly worked, and was ridden gently a short distance two days previously to the attack of the bowels; therefore, the only violent exertion to which he had been exposed was that of rolling, pawing, &c.; yet it was sufficient to bring on this tendency to spasmodic action in the diaphragm, or, perhaps, to cause it to sympathize with the disturbed action of the bowels. I wish Mr. Castley, or some other master mind, would take up this subject. It is a new and very interesting one.

CASE OF INJURY TO THE TONGUE OF A MARE.

By Mr. C. Dickins, *V.S., Kimbolton.*

1832. *May 19th.*—My attendance was requested in haste to a bay hackney-mare, six years old, the property of Mr. King, a respectable farmer, seven miles from this place. On examining her mouth, I found that a portion of her tongue, extending as far as the frenulum linguæ, had fallen off, leaving the end of the remaining part in a sad lacerated state, and fast approaching to mortification. The detached portion was found lying in the manger, in a complete state of decomposition, and had evidently dropped off during the night. I immediately had her cast. I

excised all the unhealthy portion, and dressed the wound with a solution of chloride of soda and tinct. myrrh; ordering cold mashes and gruel until my next visit.

21*st*.—The wound much more healthy. Repeat the dressing. The mare finds much difficulty in eating.

23*d*.—The wound is almost healed, and she eats better. Repeat the dressing.

From this time the animal continued to do well, and she now eats with very little difficulty, and keeps herself in good condition. The injury was proved to have been done by the brutal horse-keeper jagging the tongue against the teeth, out of revenge for some slight affront.

My principal object in sending the case to you is, to add my humble testimony to that of your talented correspondent, Mr. Simpson, as to the merits of the chloride of soda; the virtues of which I think, with him, will be more and more prized by the veterinary surgeon.

TWO CASES OF BILIARY OBSTRUCTION SUCCESSFULLY TREATED WITH THE PROTOCHLORIDE OF MERCURY (CALOMEL).

By the same.

In the middle of February last I was desired by the farming bailiff of his Grace the Duke of Manchester to look at an ox that had for a long time been in an emaciated state, and was still rapidly losing flesh.

Symptoms.—Conjunctival and buccal membranes, the ears, horns, and skin, generally, completely tinged of a deep yellow, and the fæces extremely hard, and quite black. These appearances led me to conclude that there must be an obstruction existing in the biliary duct, which, from the complication existing in the biliary organs of cattle, leads me to believe to be much more frequently the cause of disease, than in the horse with his more simple apparatus.

Treatment.—℞ Calomel ʒj, in some good thick gruel, and repeat the medicine on the following day. I was soon convinced that I was right in my prognosis, for the beast began to rapidly amend. The yellowness all left him in a few days, and he continued to do well afterwards.

CASE II.

Dec. 7th.—A farmer came to me for something for his cow, stating that she had a deal of fever on her, and that he had given

her a pouud of salts, and bled her. Not being able to go, I sent a fever drink, ordering half to be given that night, and the remainder in the morning.

Dec. 8th.—I saw her; she appeared very dull. Pulse 60. Respiration difficult; nose dry; mouth clammy; fæces rather hard; no appetite. ℞ Sulph. ℥iij; ant. tart. ʒij; nitr. potassæ ℥j, M., and given in gruel.

9th.—Much worse. Pulse 80; extremities cold; breathing more difficult. The skin and membranes are now highly tinged with yellow; the fæces are become extremely hard, plainly indicating the seat of the disease. ℞ Calomel ʒjss. in gruel, and let a half lb. magnes. sulph. be given twelve hours afterwards.

10th.—Bowels slightly moved. Little appetite.

11th.—Much better. Bowels well acted on; fæces good colour. Feeds well.

12th.—Going on well.

14th.—Quite recovered. Does not require my attendance any longer.

This disease is in this part generally termed the yellows, as I believe it is in most others, and treated with comfortable drinks, viz. black pepper, ginger, aniseed, &c. given in strong ale, which soon produce what any reasonable man might expect,—death. In the second case, the substance of the liver was probably affected, but the calomel effected a cure, and is a most valuable medicine in these affections.

ON THE DISEASES OF THE HEART.

By Mr. Pritchard, *V.S., Wolverhampton.*

The able and spirited editors of The Veterinarian have completed their fifth volume; and I am right glad to find them still persevering, and anxious to keep up and improve, as much as possible, the character and usefulness of the work. I think it an incumbent duty upon the members of the profession, a service they owe to themselves, to bear their share in the labour. It is in the power of every practitioner to give us information through the medium of its pages; and it is a work devoted exclusively to our interest, and at all times willing and ready to make known to our brethren our opinions and supposed discoveries. There can be but few who have regularly read The Veterinarian without having gleaned some useful information. We yet lack much

in the science of our art: the oldest among us has much to learn; and experience in practice is continually bringing before us many diseases in the horse, and in cattle, with which we are expected by our employers to be quite conversant, and of which no mention is made at our alma-mater. Is it not, then, of the greatest importance for the improvement, and, I may say, the respectability of our profession, that we commune with each other as often as these cases occur? It is my opinion that we should; and, therefore, I proceed to contribute a morsel for the first number of the sixth volume.

Diseases of the heart, in the human subject, appear to have increased of late years, either from change in habit, external agency, or from medical men having studied more the pathology of that organ. The latter I consider the most probable cause. We hear but little of disease in the heart of the horse; but, from my own experience, I find disease of that organ not of such unfrequent occurrence as we might expect from the silence of authors and practitioners on the subject. Carditis is of rare occurrence in the horse, as a primary disease. Inflammation of the heart is generally symptomatic, consequent on continued constitutional irritation; and for this reason we commonly suspect some other organ to be the seat of mischief when symptoms of disturbance in the heart are sufficiently perceptible, after we have been once taught to recognize them.

The affections of the organ to which I am about more especially to direct the attention of my readers, are hypertrophy, dilatation, and hydro-pericarditis. Ossification I believe to be very rare in the horse; and this is somewhat remarkable, when we consider how prone the bones and cartilages are to this affection. In the human subject the case is reversed; for ossification of cartilage and bone is comparatively rare, while the orifices of the heart and the coats of the arteries are frequently thus diseased. It is highly important that we should be well informed with regard to the symptoms of these several diseases in the heart of the horse. Being of unfrequent occurrence, when they do present themselves, they are a test of our experience and judgment. The rarity of these diseases is known only to ourselves; our employers in these cases, as in others, expect a prompt decision.

In the generality of the cases which come to the knowledge of the veterinary surgeon, the incipient stage of the disease is passed; the work of destruction is nearly completed: the animal is about to close the period of his existence, and but trifling information, as to the history of the case, can be gleaned from the parties to whom the horse belongs. The case is generally a

mystery to them. The practitioner is applied to for information and assistance: here a knowledge of the characteristic symptoms is truly valuable, in order to preserve the veterinary surgeon from falling into that error so detrimental to professional estimation, viz., of holding out to his employer expectations of recovery in a decidedly irrecoverable case.

It is not my intention here to give a laboured account of the symptoms of these several diseases, but to relate corresponding cases. As the best mode of illustration, the first is that of

Hypertrophy of the Heart.

The subject of this case was a three-parts-bred six-year-old mare, about fifteen hands one inch high, of a tolerably good make and shape, in fair working condition, employed in the posting establishment of Mr. R. E., of this town, in the month of February, 1827. I was called to her assistance on the 24th. Her pulse was 68, hard, with sufficient dilatation of the submaxillary artery; respiration laborious; membranes of the eye and nostril vascular, but not so much so as to betoken any considerable degree of inflammatory action: the surface of the body and extremities warm, and she was partially off her feeding. On inquiry, I ascertained that her respiration had been perceptibly laborious for a fortnight, but had much increased during the last evening and night. She was placed in a loose box; bled five quarts; and nauseating doses of aloes were given every six hours, until the fæces became pultaceous. She had oatmeal gruel to drink, in small quantities, every hour; flannel rollers were applied to the legs, and the clothing increased.

Second day.—Pulse 70; artery less dilated; respiration more laborious; body and extremities quite warm; membranes of the eye and nostril, if any thing, less vascular than yesterday; the blood flows freely through the jugulars. Again bled four quarts; the medicine as before, but in diminished doses.

Third day.—The whole symptoms as yesterday, except that the conjunctiva and pituitary membrane were much less vascular, and the bowels were gently moved. The bleeding repeated; the aloes discontinued; one drachm of emetic tartar and half an ounce of nitre given at the same intervals.

Fourth day.—Pulse 74, hard; the artery less dilated; difficult respiration, amounting to orthopnœa. The extremities and body quite warm, and the jugulars distended with blood. The membranes of the eye and nostril in colour much as in health. I opened the jugular, and the blood flowed in a copious stream until about four quarts had been drawn, when, the flow diminishing, I pinned her up. This did not produce any change either

in the pulse or the breathing. I listened to the heart; its contractions were powerful, loud, and regular; but the organ was evidently much oppressed. The fæces are in a good state, and the medicine keeps up the secretion of the kidneys.

Fifth day.—No change; and it was evident she could not live. I was confident there would be an explanation in full on dissection.

Sixth day.—The warmth of the body and extremities genial as in health. The blood in the jugular is considerable, and would, if required, afford a copious stream; but she looks aghast, and must die of suffocation in a few hours. Late in the evening she died.

Post-mortem examination.—Nothing remarkable presented itself in the brain, beyond a little turgescence of the vessels. I proceeded to open the chest by raising the sternum, and brought the pericardium into view, quite entire. I carefully exposed the heart by an incision into the pericardium. The sac contained a small quantity of healthy fluid. The right side of the heart was considerably enlarged, particularly the right ventricle, and without softening of the walls. It was a fine specimen of hypertrophy of the right auricle and ventricle.—The lungs were next examined: both the right and left lobes were of a pale red healthy-looking colour, but in bulk apparently too large for the space allotted them in the thoracic cavity; their investing pleuræ, together with the pleuræ costales, shewed no trace of increased vascularity; in fact, the pleuræ were quite healthy, and but a small portion of serous fluid occupied the thoracic cavities. I carefully removed the lungs from the chest, and laid them upon a table. They were very heavy. On cutting into them, a transparent serous fluid ran freely from their intercellular structure. This œdema of the lungs extended throughout their whole extent. In the cavity of the abdomen the viscera were quite healthy.

[To be continued.]

A CASE OF NEPHRITIS.

By Mr. Joseph Toombs, Jun., *V. S., Great Barrington.*

November 10, 1832.—A cart gelding, six years old, refused his food; was dull, with quick pulse, laborious breathing, stiffness about the loins, and shifting his hind legs. He lies down the greater part of his time. The urine is high coloured, and in considerable quantity; but the horse does not evince pain when pressed on the loins. Six quarts of blood were abstracted; the

blood was very buffy and tough. Six drachms of aloes were given him in a ball; linseed tea to drink instead of water; and two ounces of gum arabic night and morning in solution. The loins stimulated with spirits of sal ammoniac and oil, and kept warm with flannel, a fresh sheep's skin not to be procured.

11*th*.—Has not eaten any food since yesterday: symptoms more violent; pulse 80 to 100, and increased ten to twenty in a minute on the animal rising or turning in the stall. Urine thick and high coloured, with a considerable quantity of sand settling at the bottom of the vessel. Seven quarts of blood were taken. Linseed tea and gruel to drink. Gum arabic in solution as before. Tucked up very much in the carcass.

12*th*.—No better. Urine high coloured as before; does not lie down so much; does not feed. Bleed to the amount of seven quarts, which produced fainting. Aloes, four drachms. Linseed and gruel as before. Two ounces of gum arabic night and morning.

13*th*.—As before; but bowels opened. Gruel, linseed tea, and gum arabic, as before.

14*th*.—Pulse 82. Same as yesterday. Treatment the same.

15*th*.—No amendment in the symptoms. Urine high coloured as before. Treatment as before. Stimulate the loins more actively.

16*th*.—Rather better. Urine not so high coloured. Sediment less in quantity. Digitalis half drachm night and morning. Linseed tea. Feeds a little. Pulse 60.

17*th*.—Ball as before. Linseed tea to drink. Feeds much better.

19*th*.—Considerably better. Urine of the natural colour. Feeds better. Ball as before: was not seen after. Soon recovered.

TWO CASES OF CANKER.

By the same.

CASE I.

July 27, 1832.—An aged draught horse had been lame in the near hind foot for six months; on examination, the crust was found to be hollow on the outside, with a fœtid discharge of matter peculiar to canker. After removing the crust from the heel one-third part round the foot, the laminæ were found diseased: spurious granulations had arisen on the surface. After properly paring out the part, it was dressed with powdered white arsenic.

10th August.—Foot pared out, and caustic applied as before: in consequence of the animal being wanted for continual service, it was not dressed again until the

5th October.—Foot pared. Application as before, once a fortnight: the foot gradually got better; and, on the 3d of December, was quite well. The animal always rested the day after the application of the arsenic.

CASE II.

April 21, 1832.—A six-year-old waggon horse, the property of a miller, twelve miles from hence, had been attended by a neighbouring farrier for ten months, with lameness of the near fore foot. On examination, the sensitive sole and laminæ were found in a diseased state on the outside of the foot; fœtid discharge of matter. The part was kept properly pared. Powdered white arsenic applied to the spurious granulations when requisite; and the following powders used twice a-week: Sulph. copper in powder ʒvj, alum powder ʒij, bole ʒij. The horse was turned out to grass. A whole bottom shoe, with a slide at bottom and turned up the side of the crust, was applied to the foot, to keep on the dressing, and protect it from dirt, &c. Exfoliation of the side and lower part of the coffin-bone took place; after which the foot gradually got well.

2d August.—Crust grown down; sole hard; animal free from lameness, and at work.

A SERIES OF ESSAYS ON THE BLOOD, BLOOD-VESSELS, AND ABSORBENTS.

By Mr. R. Vines, *V.S., Royal Veterinary College.*

The Claim of the Hunters to the Discovery of Functions of the White or Lymphatic Veins of Red-blooded Animals, farther considered.

Before I proceed farther with this subject, I must beg to be allowed to correct an error which occurred in my last communication; in which it is stated that, "although the Hunters might have carried their theories too far in considering the white or lymphatic veins of red-blooded animals as a sole and separate system of absorbent vessels, yet, in justice to them, it must be confessed that they were the first in this or any other country who taught that these vessels possessed the faculty of absorbing from *serous surfaces,* as well as that of absorbing the more *solid parts of the body.*" The latter I believe is justly due to them,

while, on reconsidering the subject, I find that although these gentlemen in the year 1762, in their medical commentaries, stated the absorption from the serous surfaces as one of their positions, yet I now find that this idea was taught by Boerhaave before the year 1743, and, to prevent any misunderstanding, I here introduce his own words on the subject.

"Hippocrates distinguished the solid parts of the human body into cavities and vessels; the cavities in a healthy body, he says, are full of vapours, but in a diseased body full of sharp humours, or *ichor*. And it is certain that all the cavities and interstices in the human body are supplied with a warm and moist vapour, which renders the membranes and muscular fibres pliable and fit for motion, and prevents them from adhering to each other. But this vapour is never discharged in such quantities as to turn into liquor, and prove offensive; for, upon opening the thorax or abdomen of a living brute, nothing but a vapour exhales without any water remaining; *this vapour must therefore return again into the blood, which it can do by no other vessels that we are yet acquainted with, than the lymphatic veins.* Dogs have a communicating passage from the testicles into the cavity of their abdomen, which is not found in men. Nuck, therefore, wounded the *scrotum* of a dog, and injected a pound of water thereby into the cavity of the *abdomen*, sewing up the wound after the operation. The dog afterwards voided all the water by urine within the space of three days; so that no part thereof was found remaining in the *abdomen*. There must, *therefore, be an open and continued passage from the cavity of the abdomen to the receptacle of chyle.* The warm and subtil vapour which is natural to the body, will be, therefore, much more *easily admitted* by the *same vessels*, though its quantity be not inconsiderable; which is argued by the largeness of the cavities which are moistened therewith, as those of the *pelvis, scrotum, abdomen, thorax, pericardium, cranium, ventricles of the brain, cavity of the lungs, stomach, intestines*, &c. The same is also argued from the *sudden increase of a dropsy*, where the vessels are not affected, but only the *absorption of this vapour obstructed.* As this vapour, therefore, appears to be so copious, it must have no small share with the other part of the lymph in assimilating the chyle, and rendering it the more easily convertible into blood and other juices proper to the human body*."

* Professor Boerhaave's Academical Lectures on the Theory and Practice of Physic, vol. i., p. 361. 1743.

NO. VI.

The Nature of Absorption as effected by the Mesenteric Veins.

That the extreme radicles of the mesenteric veins really do perform the function of absorption from the inner surface of the intestinal canal cannot, in my idea, be in the least doubted of; for if such was not the case, there would have been no necessity for nature to have caused these vessels to have taken their origin by open mouths from these parts.

The following experiment, which was performed in the year 1826, will also go to support what has already been advanced by Magendie on this subject. Having kept a dog for some time without allowing him to take any kind of food or drink; immediately previous to performing the experiment, I allowed him to take a pint of milk and water: then, after properly securing him, an opening was made into the trachea, through which was introduced a tube, which was connected with a small pair of bellows; and, in the next place, the spinal marrow was pierced with a sharp-pointed probe, between the occipital bone and the first cervical vertebra, for the purpose of producing a partial insensibility. The bellows were then slowly worked by an assistant, with the view of producing respiration artificially; and the cavity of the abdomen was laid open to its whole extent, by means of which, the stomach, intestines, liver, &c. were freely exposed. Finding the muscular action of the stomach, as also the peristaltic motion of the intestines, and likewise the circulation of the blood, still going on in these parts, I in the next place, divided the sternum; opened freely the cavity of the chest; exposed the heart, lungs, &c.; and then on the right side of the spine I divided the thoracic duct, from whence there flowed about a tablespoonful of white lymphatic fluid.

Having kept up respiration for the space of one hour and twenty-five minutes, I was then induced to see what effects would follow on dividing the hepatic duct at its entrance into the duodenum: as soon as this was done, there escaped from thence a small quantity of bile, and, very soon after this had taken place, the circulation of the blood through the mesenteric arteries, veins, &c. became very greatly diminished, as also the peristaltic motion of the intestines, and the circulation of the blood through the heart, lungs, &c.; and, in the further space of a few minutes, all these efforts of life entirely ceased.

Examination after Death.—On opening the stomach there were found only about two teaspoonfuls of coagulated milk, and a small quantity of gastric juice. The duodenum, and other small

intestines, were covered on their internal surfaces with a small quantity of mucus and biliary fluid, while the large intestines, as the colon and rectum, contained a very small portion of fæcal matter. I then collected together all the contents of the stomach, intestines, and the fluid which had escaped from the thoracic duct during this experiment, and found the quantity not more than one-third of a pint.

From this experiment, therefore, it becomes very evident that the intestinal absorption of the fluid must have taken place by the mesenteric veins to a much greater extent than by the lacteal absorbent vessels; and, as a proof of the function of absorption and excretion having been carried on, it will also be proper to state, that the bladder became filled with urine during this experiment.

As a further proof that the real veins do absorb a large portion of the fluids which are taken into the stomach and intestinal canal, Magendie very justly observes, "that there are some persons who drink from two to three gallons of mineral waters in a few hours, and reject them almost at the same instant by urine. Also, that it is impossible for the thoracic duct, from its smallness in size, to be enabled to give a sufficient passage to these and the lymphatic fluid at the same time."

We find, likewise, in our veterinary practice, that horses, when deprived of water for some time, will, if allowed, drink a very enormous quantity at one time; almost the whole of which, instead of remaining in the stomach and small intestines, will in place thereof pass directly into the *cæcum* and *colon*, from whence it will quickly become absorbed, to be again passed off by excretion.

Now, in such instances as these, it is very evident that the *extreme radicles of the minute branches* of the large veins of the *cæcum* and *colon* must, under these circumstances, absorb the principal portion of the water admitted into these parts. Besides, from the very great extent of surface for absorption which these two intestines present, as well as the innumerable manner in which the radicles of the veins arise from the inner surface of these parts, also in a very great measure tend to confirm that which has been already advanced on the subject.

It is, I say, very clear, from the great rapidity with which the water is absorbed, that this absorption must principally be affected by the extreme radicles of the mesenteric veins. Besides, the lacteals are not at all numerous in these parts; in short, not a quarter part so numerous as they are in the small intestines, as the *jejunum* and *ileum*, from whence by very far the *greatest quantity* and the *best portion* of the chyle is absorbed from, and

in which there is always a very limited quantity of water to be found. Hence, then, the small intestines, as the *jejunum* and *ileum*, may be considered as those parts of the intestinal canal from which the more pure or better part of the *chyle, or new white blood,* is absorbed ; while, on the contrary, the large intestines, as the *colon* and *cœcum*, may be considered as those parts from which the *more watery*, or by far the least nutritious parts are absorbed or taken up ; and there is not the least doubt in my mind that this latter function is effected by the minute radicles of the mesenteric veins to a much greater extent than we have hitherto been aware of.

If, therefore, not only veterinary, but likewise practitioners in human medicine, were to pay a little more attention to these subjects, and not to be led away with the idea that the lacteal vessels are the sole absorbents of the intestinal canal, and that the real veins have not any share whatever in that function, they would, in my opinion, be enabled *more clearly to account for the different action of purgative medicines*, as also, *the function and diseases of that very important organ, the liver ;* as it is a well known fact, that if the mesenteric veins really do absorb fluids from the intestines, as already stated, these fluids, before they can enter into the general circulation, to be passed off again, must of necessity first of all circulate with the venous blood through the liver. I have not the least doubt of this being the case; and more particularly, when it is found, that those persons who are known to drink very large quantities of spirituous liquors, either with or without being combined with water, are always much more subject to diseases of the liver than those who live otherwise.

If that which has been already announced is acknowledged to be generally correct, it will, also, in a very great measure, tend to explain the *real nature and causes* of the diseases of the liver, &c. of some of our animals, and more particularly of *sheep*, which so frequently occur in wet seasons, as well as when they are kept in *very low wet situations*, more particularly in the autumn of the year, and commonly denominated *the rot.*

The food, under these circumstances, contains a *much larger portion of moist watery matter* than is really necessary for the healthy support of these animals, and the quantity of water imbibed with the food in such seasons being to a much greater extent than the more *solid nutritive matter* in the more dry seasons; the necessary consequence is, that a much less quantity of *real healthy chyle*, or new white blood, is then made than when the *food contains less moisture*, and, of course, *a greater quantity of more solid nutritious matter.* Hence,

then, from the diminished quantity of pure chyle being made, the function of absorption by the lacteal vessels, no doubt, becomes much less than is natural, and the entire system very soon suffers from direct debility, the result, I should say, of *imperfect chylification.* While, in addition to this, from the very large or *unnecessary quantity of watery fluid* which in wet seasons is always taken in with food, the mesenteric veins, no doubt, for a time attempt to remove it by a process of absorption in the natural way; but in consequence of this undue quantity of *watery fluid being compelled to pass from the mesenteric veins through the substance of the liver, a chronic inflammation* of that very important organ is the ultimate and not distant result; and hence follows dropsy, frequently diarrhœa, and, at length, death.

In such cases as these, the biliary ducts after death are very frequently found to contain a great number of flat worms, commonly called *flukes.* These by many are considered, in addition to the wetness of the seasons, as the cause of the disease of the liver. I am not inclined to believe that they are of any service; but I should rather consider them as the effect than as the cause of disease; for it is a well known fact, that almost all animals, when become more or less sickly or unhealthy, or approaching to a state of disease, are found to generate *animalculæ* in various parts of the interior of their bodies, and which are seen in the form of intestinal worms, &c.

As I have, I am afraid, departed too far from the subject, I shall now again return to the function of absorption by the extreme radicles of the mesenteric veins. Dr. Copland, in his Appendix to the second edition of Richerand's Physiology, 1829, in treating on the function of absorption from the digestive canal, states, "that from the experiments of Tiedemann and Gmelin on absorption, the lacteals take up the digested and dissolved portions of alimentary substances, and convey them, as chyle, through the thoracic duct to the bloodvessels; but as odoriferous, colouring, and some saline substances are not absorbed by them, and yet are found in the blood of the vena portæ, and in secreted fluids, it necessarily follows, that there must be some other way than the thoracic duct by which they pass into the blood.

"The following are the chief suppositions which have been offered in explanation of the facts. Either all the lacteals do not enter the thoracic duct, and a part of them join the veins which form the vena portæ, and thus transmit their contents into the blood of the vena portæ, or substances pass directly from the stomach and intestinal canal into the veins; or, finally, both of these suppositions may be true.

These physiologists found that quicksilver injected into the absorbents of the intestinal canal easily reached the mesenteric veins and the vena portæ, and this communication was found to take place in the mesenteric glands. By means of this communication, they explain the appearance of *streaks of a substance like chyle,* which is perceived in the blood of the vena portæ after taking food; a fact which has been frequently observed by other anatomists."

In reply to the suppositions which have been advanced by these physiologists, and which are, "that either all the lacteal vessels do not enter the thoracic duct, and that a part of them join the veins which form the vena portæ, and further, that the communication of the lacteal vessels with the mesenteric veins and vena portæ has been found to take place through the glands of the mesentery by the injection of quicksilver into the lacteals of the intestinal canal," I have only to add, that from my own examinations and injections, as also those of the first-rate anatomists in this country, no communication whatever of this kind has yet been found to occur.

And as regards "the appearance of streaks of a substance like chyle being found in the blood of the vena portæ after taking food," I have only to observe, that a similar appearance of the blood taken from *the arm* of the human subject has also very frequently been observed; of the real nature and cause of both of which I shall endeavour to give a full explanation when I come to treat of the *blood, lymph,* and *chyle,* and the varied changes and appearances which these present during their course through the whole circulatory system.

Dr. Copland further observes, that from these and some other experiments, "it was found, that on examining the blood taken from a branch of the mesenteric vein of a dog, to which sulphuro-prussiate of potass had been given, no streaks of chyle were present, but the saline matter was perceived. From this and other experiments, they conclude that the veins of the intestines appear particularly to absorb heterogeneous substances, such as those already particularized (alcohol, gamboge, indigo, &c.), whilst the lacteals take up nutritious matter; and, consequently, that substances taken into the digestive canal may pass into the mass of blood, first, through the lacteal absorbents and thoracic duct; secondly, through absorbents which are united with veins in the mesenteric glands; thirdly, through the radicles, or the commencement of the mesenteric veins, which ultimately form the vena portæ."

The *first* and *third* of these positions have already been fully treated on; and I should consider that the various facts which

have been brought forward by modern physiologists are quite sufficient to convince us that the *principal function* of the *lacteal vessels* is to *take up,* in the *form of chyle,* the more solid, digested, or dissolved portions of the nutritive substances admitted into the alimentary canal; and, without these vessels having any communication whatever with the mesenteric veins or liver, they are enabled to convey their contents to the receptaculum chyli and thoracic duct.

On the other hand, as far as regards those fluids which do not undergo so true an assimilated process, and in which various hetrogeneous substances are occasionally introduced, I have already stated, that I have not the least doubt that they are absorbed by the extreme radicles of the mesenteric veins, and afterwards pass to the vena potarum, and through the liver, as already stated.

But to contend, as is stated in the second position, that the lacteal absorbents communicate with the mesenteric veins through the lymphatic glands, and that by such means a part of the chyle is enabled to pass too, and ultimately circulate with the venous blood *through the liver,* while, on the other hand, the other portion of the chyle is supposed to pass as in the common acknowledged way to the receptaculum chyli and thoracic duct, is, in my idea, to maintain that which is unsupported by any proofs, either anatomical or physiological.

If we minutely examine the structure of these lymphatic glands, we find that the *very small veins* already spoken of, and which are those through which *this communication* is supposed to take place, instead of, as imagined, having any thing whatever to do with the lacteal vessels, do, in place thereof, take their extreme *origin from,* and are only the corresponding red veins belonging to, those small arterial branches which are given off from the trunks of the mesenteric arteries at the root of the mesentery; and which arteries, no doubt, are for the purpose of supplying not only the substance of the glands, but also the *immediate surrounding portions of the mesentery* with blood for their support.

These arteries, therefore, like the arterial branches in other parts of the body, are found to terminate in two orders of vessels; that is, first in veins which convey back the red blood toward the centre of the circulation, and which are those just mentioned, and secondly, by their extreme terminations in the minute radicles of the *transparent* or *white veins,* that are more commonly called lymphatic vessels; and which lymphatic vessels are proved to be the second *class of lacteals.* I have proved this fact sometime ago myself (see the *Lancet*); and I am happy to find from

a statement of Boerhaave's* that the celebrated Cowper also, from minutely injecting these parts with quicksilver, likewise came to the same conclusion.

The second class of lacteals, therefore, not only take their immediate origin from the extreme branches of the *first* in the mesenteric glands, like the *branches of two trees opposed to each other*, but also from the extreme branches, or the transparent serous termination of the arteries belonging to the lymphatic glands; and which last communication has also been proved by that which has already been so often stated relative to the second class of lacteals receiving red blood from the arterial, and in which case both sets of vessels are found to have become very considerably enlarged in their size, so as for the latter (the lacteals) to assume the same character to the real veins.

Hence, then, it appears to me, that the second class of lacteal vessels, from having *different origins*, must, of course, be capable of performing a variety of different functions also; and from common observation, as well as from the anatomical structure of the parts in which these vessels are situated (for I beg to observe that as well as being lacteals they are also the only lymphatic absorbents found in these parts), I consider that they are capable of performing four distinct functions; first, that of receiving the *chyle or new white blood* from the extreme branches of the *first class* of lacteal vessels, and probably from the *cells* of the mesenteric glands, in which I have some idea that the *first class* also *terminate*, and from which the *second class* likewise *take their origin*. Secondly, that of receiving and of returning back towards the centre of the circulation the transparent lymph, or *white venous* blood, from the extreme or serous branches of the arteries of the lymphatic glands. Thirdly, that of also taking their immediate origin from and of absorbing a portion of the surrounding peritoneal secretion. And, fourthly, as before stated, as those extraordinary cases where the function of digestion suddenly becomes suspended, of performing a most rapid absorption of the adhesive substance belonging to those parts, and under such circumstances these vessels becoming so much increased in size as to assume the same character as the real veins.

Both the second and third of these positions will serve to explain that which has been so repeatedly advanced by different authors, respecting the character of the chyle being changed during the passage of this fluid through the mesenteric glands; for on examination it is found to have become of a *more coagulable nature* in the second *class of lacteal* vessels than it was in

* See the Lectures, p. 346.

the *first class*, or prior to its entering into the lymphatic glands; and hence these glands have been considered as designed to effect some very important change in the chyle during the passage of this fluid through them. The reason of the chyle becoming of a more coagulable nature in these glands now appears to me very evident; for, in traversing these parts the chyle not only receives a mixture of the absorbed peritoneal excretion, but also a portion of transparent lymph or *white blood* from the extreme branches of the arterial vessels of these lymphatic glands; and if this explanation is just, the chyle ought to gradually become of a *more coagulable* or red blood-like nature as it unites with *the lymph*, or the *more real assimilated white venous* blood in the receptaculum chyli and thoracic duct; and *so it does*, from an admixture of the lymphatic fluid, until it ultimately reaches the right side of the heart, there to unite with the red venous blood from all the various parts of the body, and in combination with it to pass through the lungs, in order, by the union of the oxygen of atmospheric air, to become still more highly assimilated, and of a bright scarlet colour, commonly called arterial blood.

[To be continued.]

EXTRACTS FROM MY CASE BOOK.

By Mr. W. Simpson, *V.S., Southampton.*

No. V.

Phlegmonous Inflammation of the Submaxillary Gland.

In the early part of October last, an extensive postmaster of this town had a horse attacked with a disease evincing all the symptoms of ordinary catarrh. A farrier attended the case for some weeks, during which time the patient gradually became worse, until the owner was at length induced to destroy him: and from an account of the post-mortem appearances, related to me by Mr. —— himself, I have no hesitation in saying that the horse died glandered; for there was extensive ulceration of the leftside, of the septum, extending a considerable distance down the trachea, and farcy ulcers had appeared along the abdomen and inside of the thighs. Previously to the death of this animal, two others were attacked in a precisely similar way; and on the 2d of November, when those two last patients had been ill about one week, I was called in. As the symptoms and treatment of both cases

(as well as several others) were alike, I shall only speak of one, a bay horse, eight years old.

On the second of November I first saw the horse, at which time the symptoms were as follow. Pulse, 47; *left* submaxillary gland swollen to the size of an egg, *hard, and perfectly adherent to the bone.* Occasional discharge of pus from the *left* nostril. Schneiderian membrane, particularly in the *left* compartment, of a peculiar leaden hue, but not the least appearance of ulceration. Appetite tolerable; slight soreness of the throat. Extremities warm. Breathing quite tranquil; and a rowel inserted by the farrier exhibiting a large ill-conditioned sore, about six inches in diameter, the whole of the separated integument having sloughed away.

In consequence of the history of the animal which was destroyed, and the very ambiguous symptoms attending the present case, it behoved me to be extremely careful in my prognosis. At the commencement, the disease was evidently nothing more than common catarrh, for the patient then had a cough, as well as sore throat, &c.; but now the enlarged, hard, adherent gland, on the left side only, and the unhealthy appearance of the septum on the corresponding side, were circumstances warranting suspicion that the disease was assuming a malignant character, and might probably end in decided glanders. Under such circumstances, my course was somewhat difficult: on the one hand, I had never seen catarrh assume a character so very doubtful; and, on the other hand, I could not bring my mind to conceive that glanders actually existed, chiefly because the discharge was occasional and irregular, both as to time and quantity, and a strict examination did not enable me to discover the slightest ulcer on the membrane.

Assuming, however, that the enlarged gland was attributable to some other cause than the absorption of poisonous matter from an ulcer on the septum, and knowing, from the experience of myself and a highly valued friend, the power of iodine over glandular swellings, I resolved to try that medicine for the reduction of the enlargement, and to treat the case, in other respects, as simple catarrh: accordingly I prescribed tr. iodine cum lin. sapon. comp. to be well rubbed upon the part two or three times a-day, and I administered a fever ball, to which was added six grains of iodine morning and evening.

The sore upon the breast was dressed daily with sol. chlor. calcis.; a mash diet and loose box were ordered: the patient had been bled the day previously to my visit.

I persevered in this treatment until the 10th, but I could not, at that time, notice the least effect produced by the iodine either

upon the system at large or the affected part. The general health of the animal appeared good; he ate heartily, supported his condition, and the febrile symptoms which were present at first had quite subsided, the pulse being stationary at 35; yet the discharge from the left nostril continued, and the swelled gland had increased in size, and was still adherent to the bone and extremely hard.

Notwithstanding these suspicious circumstances, I could not acknowledge to myself that glanders was established; but having been disappointed in my expectations of succeeding by the above treatment, I altered my plan, and applied a strong blister to the enlargement.

On the 11th the hardness was not so great, but, as the blister had not taken so much effect as I wished, I repeated it, and on the 13th fluctuation was evident: consequently I gave vent to the matter, of which about eight ounces escaped. A poultice of linseed meal was applied, and the orifice kept open a few days; the discharge from the nose gradually ceased entirely, and the animal has been at work ever since in perfect health.

Since that time I have had several similar cases, characterized by the same symptoms, and successfully treated in the same manner.

In the preceding case I have an excellent illustration of the beneficial effects of the chloride of lime; for I think I never saw a wound heal more kindly than did the *quondam* rowel under its influence.

ON THE NAVICULAR DISEASE.

By the same.

It is Professor Coleman's doctrine, that the Navicular Disease is always gradual in its approach—that, in consequence of certain states of the hoof, the navicular bone is thrown nearly out of use—that the secretion of synovia is greatly decreased thereby—that this decrease is felt first in the very centre of the bone, because of a protuberance there adapted to a corresponding depression in the flexor tendon, and that inflammation is thus produced by *want of use*, &c. &c. Now I do not intend to enter into a theoretical inquiry with regard to the stability of these opinions, but will briefly relate a few cases, selected at random as they present themselves to my memory; thus adding my humble testimony to the fact, that whatever be the predisposing cause, the absolute occurrence of the disease is frequently quite sudden.—Early in September last, a bay mare,

four years old, belonging to Mr. Fowler, steward to Sir William Heathcote, Bart., was taken *suddenly* lame in the off-fore leg whilst at work in a rough, stony country. The knowing ones, who are always so ready to tender their opinions upon such occasions, were divided in their ideas as to the seat of the lameness, some attributing it to that old cat's-paw the shoulder, others to the flexor tendons, others to the fetlock, &c. The shoe was taken off, but they were sure nothing was the matter with the foot. I did not see the case until the 14th of September, when the lameness had existed nearly a fortnight, but the symptoms were such as to leave little or no doubt on my mind that the disease was in the navicular joint: I treated the mare according to such conviction, and, in something less than a month, she was turned out to grass perfectly free from lameness.

A fine chesnut gelding, belonging to —— Seymour, Esq. fell *suddenly* lame as the groom was riding her on the road from Brighton to Southampton, about the 26th of October. He underwent various treatment until November 7th, when I first saw him, and when the lameness was very severe. The evidences of navicular disease were here most manifest. I treated him for it, and in a few weeks he was sent off to Clifton, near Bristol, apparently perfectly sound.

H. C. Compton, Esq. of Manor House, New Forest, was driving a bay mare from his residence to Southampton. About three miles from the town, she became *suddenly* lame to such an extent, that Mr. C. thought she had broken down, and was obliged to suffer her to walk quietly the rest of her journey. Upon a first examination, I could not satisfy myself as to the cause of the lameness, but on the following day I did not hesitate to attribute it to the navicular joint, and placed her under treatment accordingly: she recovered partially, but not perfectly, as she was very much battered by previous work.

On the 8th of November, a bay horse belonging to G. A. Fullerton, Esq. fell *suddenly* lame, when Miss F. was cantering into Southampton. I examined him, and treated him for navicular lameness. He is turned out for a winter's run, perfectly sound.

I might easily multiply these cases, but I have merely mentioned a few which most readily offer themselves to my recollection; yet I think I have quoted enough to shew that the disease is frequently *sudden* in its actual development.

In all the foregoing instances, and in fact in every case of navicular lameness I have attended, the predisposing cause has evidently been what Mr. Turner calls occult contraction, or a sole morbidly thick and hard.

ON WOUNDS OF THE THORAX.

By Mr. Hales, *V.S., Oswestry.*

There are few accidents of more practical importance to the veterinarian than wounds of the natural cavities, whether of the larger cavities of the body, or the smaller but very important ones of the joints; and, probably, there are few, if any, injuries, the successful or unsuccessful termination of which depends more upon the treatment adopted. They are injuries that, if left to themselves, or badly treated, will almost certainly end in the uselessness of the animal, or in death, if the large cavities or most extensive joints are the wounded parts. On the other hand, if recourse is had to prompt and judicious measures, and there is no material injury of the contained parts, a perfect and often speedy recovery may be obtained. I shall, at present, confine myself to wounds of the thorax, but probably may, at a future time, extend my remarks to opened joints. I would now merely observe, with respect to wounded joints, that the plan of treatment I have followed for several years is similar in principle, though somewhat different in the means employed, to that so ably advocated by Mr. T. Turner.

In the treatment of wounds of the thorax, I consider that there are two principal objects to be kept in view—to subdue or ward off inflammation, and to keep the cavity of the chest sealed from the admission of the external air: in fact, if the latter is not strictly and rigidly attended to, the former cannot be attained.

I have been surprised at the almost sudden manner in which relief is often obtained by attending to the latter indication. The horse has been breathing most laboriously, with a depressed appearance and anxious countenance, accompanied by that hissing noise that so clearly marks the passing of air to and from the chest. The wound has afterwards been carefully and completely closed, so as to exclude the external air, and the breathing has shortly begun to improve; the horse has brightened up; and in a few hours the respiration has become easy, and the patient in comparative comfort. On the other hand, if the air is not excluded, the lung on the injured side remains in a collapsed state, and its functions cannot be performed: pleuritic inflammation quickly succeeds, and death closes the scene. This has been uniformly verified so far as my own practice and experience go.

By attending to the above directions, we are endeavouring to place the parts as nearly as we can in their former position and connexion, by substituting an artificial bulwark for the natural one that accident has destroyed. It is not difficult to keep the

chest hermetically closed, even if the wound is a large one; but perhaps I shall better explain myself by giving a brief detail of two successful cases of wounded chest, than by any lengthened description:—

On the 29th of June, 1831, I was sent for in haste to see a strong cart-horse, that had been this morning gored by a bull. On my arrival at the place (ten miles from Oswestry), and going into the stable to my patient, it was evident, without further inquiry or examination, that the parietes of the chest had been perforated. The horse was shivering violently; he was breathing with great difficulty; and in each act of respiration the air rushed in and out of the wound with a strong hissing noise. He had been seen early in the morning quite well, and at seven o'clock A.M. was discovered to have received the injury. Upon proceeding to an examination, it was ascertained that there was a wound, nine inches in length, commencing behind the elbow, and running upwards and forwards under the shoulder. Having introduced my hand into the external wound, I very readily passed two fingers into the chest, and could distinctly feel the lung in a collapsed state. There was no hæmorrhage, and it was supposed that the lung was not wounded.

Being strongly impressed with the necessity of immediately cutting off the access of the external air to the chest, the wound was brought together by sutures, and then covered with pledgets of tow dipped in melted adhesive plaister,—pledget upon pledget,—till a complete barrier was made against the admission of air. When satisfied that this had been effected, a large compress of wool was put over the dressings, and this secured by a cloth properly applied. The pulse was beating seventy, and the breathing very difficult: this last symptom no doubt principally arose from the horse's being able to breathe with one side of the chest only, in consequence of the collapse of the lung on the injured side, from the admission of the external air.

Eight pounds of blood were taken away, and five drachms of aloes given.

I explained to the owner—a very intelligent farmer—my view of the case;—that it was of the utmost importance that the wound should be so closed that no air could get into the chest; and, therefore, if the dressings remained firm, he should not interfere with them: but if any portion got loose, he should immediately replace it, and that to any extent that might be necessary to effect the purpose we had in view. The horse was ordered to be kept perfectly quiet, and fastened so that he could not lie down. He was to have mash diet, &c., and three quarts more blood were directed to be taken away in the evening. The distance to my

patient being considerable, and having other engagements for the next day, I requested the proprietor to write to me, and inform me of the state of the horse early on the next morning, that I might judge of the necessity of seeing him.

30th.—I received a note, stating that about four hours after I left my patient, yesterday, the difficulty of breathing began to abate, and the horse ate a mash; and that this morning the breathing is tranquil, and he will eat all that is allowed him. The dressings are all fast, and no air enters or escapes from the wound. I desired that the horse might be bled again to-morrow, and the other treatment continued as before.

July 3d.—Having received a daily good report of the case, I did not see the horse until this morning, when the dressings were removed. The sutures were secure, and kept the wound closed, except that a thin discharge issued from the lower part of it; respiration was free. There was occasionally a slight cough, and a little mucus was discharged after the cough. The horse eats all that is given to him. The dressings were replaced as before, two quarts of blood abstracted, and a laxative was ordered to be given to him two days afterwards.

It will be needless to go on farther with the detail of this case. Let it suffice to say, that the same plan was continued; the wound was kept accurately closed; strict antiphlogistic diet enjoined, with occasional bleedings; and in a month from the accident, I had the satisfaction to know that my patient was quite sound.

On the 17th of September I was desired to see an old hunter, belonging to Lord Avonmore, and that was supposed to be gored by a bull; but the old horse was out at grass, and no one saw the accident happen.

There was a large wound on the off side, about four inches behind the elbow, through which I introduced my hand, in a slanting direction between the ribs, into the chest; and I could distinctly feel the lung in a collapsed state. The breathing was laborious, with the peculiar hissing noise before described.

The old horse had previously been slightly broken-winded, and I considered that this would make somewhat against his chance of recovery.

The same principles were acted upon in this case as in the other, and the same means adopted to carry those principles into effect. The wound was closed by sutures, and the air excluded by pledgets of tow dipped in melted adhesive plaister, and the dressings were secured by a broad body-roller passed over them. The horse was bled; had laxative medicine; and the antiphlogistic treatment was enforced as far as the condition of the patient seemed to require.

In a few hours after the wound was closed, the breathing became more tranquil; and, by the next day, was as free as before the injury had been inflicted. He went on without one untoward symptom, and in a month the wound was healed, except a small fistulous sore that was connected with an injured portion of the rib, but which had no communication with the cavity of the chest, and was of no importance, except that it took up some extra-time and trouble to get it healed.

THE VETERINARIAN, JANUARY 1, 1833.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

WE have waited until the printer was outrageous, and the printer's devil haunted us every moment, hoping that we might have been able to announce the *completion* of arrangements as to the future editorship of our journal which would indeed justify us in calling it a "New Series:" but many hills arose, and the waters rolled between us and some individuals to whom we allude, and we must go to the press in nearly former garb, and with this apology for the usual "leading article." The February-Number, we trust, will contain that which will delight our professional friends and assure the triumph of THE VETERINARIAN, and, identified with that, the advancement of veterinary science. In the mean time, we cordially thank our old and valued correspondents, who have rallied round us on our sixth natal day. Our readers will thank them for the communication of peculiarly interesting matter; and we are truly grateful for the good wishes and kind assurances which the private corners of all their letters contained. We are confident that their zeal in our cause and their own will not be confined to one month's contribution; and we will venture to hint to many others whom we have in our mind's eye, that they, too, have promised us something which, at a moment of earliest leisure, and, we trust, in the course even of the following month, they will perform.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

The Anatomy of the Horse. By Dr. E. F. Gurlt, Professor in the Veterinary College in Berlin. Translated from the original German, by F. Willimott, Member of the Universities of Berlin, &c. &c., and dedicated, by permission, to E. Coleman, Esq. Professor of the Veterinary College, London. Price £1. 12*s*. 6*d*. The Work will be complete in two parts, the last being in great forwardness.

The want of good anatomical plates has long been deplored by the veterinary pupil, and the practitioner too; and strong language has occasionally been used as to the injustice or disgrace of our being deprived of these requisites for the attainment of the fundamental knowledge of our art. The disgrace, however, attached to the profession generally, for a few years only have passed, since the intellectual calibre and character of our profession has been such as to justify any man of common prudence in embarking in so laborious and expensive a work.

More than one hundred and fifty years ago, Snape published his "Anatomical Treatise on the Horse." It was not the result of the author's own dissections: it was a mere copy from foreign plates, and it was full of blunders. A large engraving of the muscles of the horse, and copied from Snape's book, is industriously displayed in some of the print shops. *Caveat emptor!* It is a mere burlesque on anatomy.

Nearly a century after him, Stubbs, a painter by profession, and chiefly an animal painter, published a series of engravings representing the muscular and osseous systems of the horse. He was a very fair anatomist, but far from being a correct one; and too frequently sacrificed anatomical exactness to the production of effect.

To this followed, many years afterwards, Blaine's "Anatomy of the Horse," a work which deserved far greater patronage than it received; for although it was addressed, as it naturally would be, considering the state of the veterinary art at that time, more to the amateur than the student, and traced more the superficial and popular, than the minuter and scientific anatomy of

the horse, it was singularly accurate, for the subject of every engraving was dissected, and the drawing made, and sometimes even the engraving executed, by Mr. Blaine. It is now out of print and scarce, but it will be valued by every one who has the good luck to meet with it.

Of the foot, Mr. Freeman furnished us with some splendid and tolerably accurate delineation; and Professor Coleman's series of coloured engravings of that important organ surpasses every thing the veterinary world can present us in beauty and fidelity. Besides these we had nothing, or worse than nothing. We had an ugly and unsatisfactory plate of the teeth of the horse as connected with his age—sections of the horse which represented nothing with which the tyro was not well acquainted before he had been one fortnight at College—and sections of the head, prettily executed, and instructive, so far as the nasal cavity was concerned, but failing to give the slightest useful information with regard to the common sensorium and the origins of the nerves.

Kirtland would have prepared a beautiful and moderately priced series of *paintings* of the bones and muscles of the horse; but after much expenditure of time and entreaty, he could muster only five subscribers. We were, therefore, driven to foreign schools for assistance in this branch of our art, as in too many others, and we were not disappointed.

In 1828, appeared the "Anatomie Chirurgicale des principaux Animaux Domestiques," of Messrs. Leblanc and Trousseau. Most of the plates are coloured, and faithfully executed; but they are of too miscellaneous a nature—they do not form a connected series, nor do they touch upon the most important points of surgical anatomy; but the majority of them are wasted on comparatively uninteresting subjects. The anatomy of the region of the parotid gland did not require six plates out of the thirty; and too many were thrown away on the teeth of the horse. Still they were valuable, and find a place in most of our libraries.

To these succeeded a smaller but most elaborate work, consisting but of two fasciculi of three plates in each,—Rigot's "Anatomie des Régions du corps du Cheval, considérée specialment dans ses rapports avec la chirurgie et la médécine operatoire." Rigot was Professor of Anatomy at Alfort, and well qualified for such a work. It includes the surgical anatomy of the leg and foot, the parotidean and subzygomatic regions, the inguinal and testicular regions—the caudal and perinæal—the external part of the chest and shoulder, and the left side of the neck to the head. Rigot's *single* plate of the parotid, and the side of the

face, is worth the whole five devoted to that region of the horse by MM. Le Blanc and Trousseau.

To these we may add the singularly distinct and accurate plates of the bony and muscular systems of the horse, by Brunot, the sculptor, designed for the artist, but a perfect study for the anatomist;—the skeleton being first given divided into various portions, and placed in every position, and each of these portions afterwards clothed with muscles, and, so far as the external layer goes, faithful to the minutest point.

The great treasure of the veterinary anatomist appeared in 1824. E. F. Gurlt, Veterinary Professor at the University of Berlin, then began to publish his anatomy of domesticated animals. Every portion of every system of the horse, and ox, and sheep, and swine, and dog, and cat, whether osseous, muscular, sensorial, circulatory, respiratory, digestive, urinary, generative, or absorbent, was delineated with general, and sometimes painful accuracy. It was a rich treat, and afforded a fund of inexhaustible improvement, to trace the varying structure of every organ, corresponding with the wants and the destiny of each animal. The little half-compound stomach of the horse, an herbivorous animal, designed to serve us by his strength and his speed, presented itself in one plate—we turned the leaf, and we had the complex stomachs of the ox, still an herbivorous animal, but who was to pay us with his flesh and his fat:—the next leaf gave us the simpler stomach of the omnivorous hog, and we admired the pyramidal appendix and the glandular apparatus which fitted the viscus for the digestion of the heterogeneous food it might receive; while the simple stomach of the dog was suited to the already-half-assimilated food on which he was to subsist. The different form of the colon and the cœcum in all these animals, connected with that of the stomach, and also with their destiny, formed another division of pleasing study. In the language of Mr. Lawrence, "The basis of our physiological principles was rendered broader and deeper, in proportion as our survey of living beings was more extensive. The varieties of organization supplied, in the investigation of each function, the most important aids of analogy, comparison, contrast, and various combination; and the nature of the process received, at every step, fresh elucidation. These enlarged views, which unfold to us the natural play of the animal mechanism, are our surest guide in the study of its deranged motions;—an essential criterion for estimating the nature and degree of the deviation, and an important indication by which it may be corrected. Thus, general anatomy and physiology furnish the principles by which we are guided in our attempts to preserve health, to alleviate and remove disorder, and to cure disease."

This reasoning refers to medical practice on a different kind of being from any of our patients, and it is conclusive there. But the value of Gurlt's work is infinitely enhanced, when we consider that these animals, the various organs of which are thus delineated, differing according to the different use and purpose of each, *are our patients. We are not studying comparative anatomy, but the structure of those whose diseases we are to alleviate, whose comforts we are to promote, whose lives we are to prolong.* This, at least, was the scope of the veterinary art in every former age, and is accounted to be so still in every school in Europe but one.

The original work of Gurlt was comprised in thirteen fasciculi, each containing ten large engravings, with six or eight figures in each of the engravings. The work had its faults.—There was a roughness about the figures; but that was unavoidable when it is considered that the price must not be great, in order to render so extensive a work saleable. The price was exceedingly reasonable; each fasciculus, and which could be had monthly or quarterly as suited the convenience of the purchaser, cost only *7s. 6d.*

There were a few anatomical errors—there must need have been in so complicated a work. The reviewer once mentioned some of them to Dr. Muyschell, who had assisted Dr. Gurlt in the preparation of the work, and, in fact, had borne the greater part of the labour, and who, after his appointment as Veterinary Professor at the unfortunate University at Wilna, was taking his two years' tour, as he was compelled to do, in order to make himself acquainted with the practice of foreign schools. Dr. Muyschell replied, that there was not a single figure, the dissection for which had not been conducted by himself or Gurlt, and the drawing as carefully compared with the subject. The reviewer remembers, that when he was pointing out one error in the stomachs of the ruminants, his conscience a little smote him, for the delineation was ten times truer to the original than that which was to be found in that expensive and national work, the "Comparative Anatomy" of the late Sir Edward Home. Gurlt's is, in the main, a most accurate system of anatomy.

Gurlt's plates have been purchased by the spirited foreign bookseller, Mr. Schloss, of St. Martin's Lane, and he determined to present them, or some of them, to the English veterinary student, with a translation and a very useful and skilfully performed enlargement of Gurlt's too concise German and Latin explanation of the figures. He could not have made the veterinary student a more valuable present, if, with the exception of the improved explanation, he had strictly adhered to the plan of

Gurlt; but we cannot help thinking, that, very wrongly advised, and forgetting the true scope of the student's inquiries, he has destroyed the charm of the work, as one of comparative anatomy, and rendered it incomplete as an elementary book, by leaving out the ox, the sheep, the dog, &c., and giving us merely the anatomy of the horse; while he has, as it were, lent his aid to the perpetuation of that incomplete and inadequate system of instruction—incomplete and inadequate, at least so far as the number of subjects is concerned,—which has rendered the English school a kind of by-word and reproach in every continental one.

To him, however, who is interested in the horse alone, and to the student who confines his inquiries to the horse, it is still a most valuable present. It supplies one of the desiderata for which the pupil had been anxiously inquiring; and it will facilitate his studies in a most important degree. No veterinary student should be without either Gurlt's Anatomy of the Domesticated Quadrupeds, or Gurlt's Anatomy of the Horse, as published by Schloss. If he determines on the former, he may be supplied with the parts monthly, or at any intervals that suit his convenience and his means; and then he should have them from Schloss, as an acknowledgment of thankfulness for being introduced to so excellent an auxiliary in the pursuit of his studies. If he is satisfied with the horse, the gain of the publisher will be the greater. The cost of the complete work will be £4 17*s.* 6*d.*, and that of the Anatomy of the Horse alone, £3. 5*s.*

Extracts.

Observations on an Irregularity in the Beating of the Heart and the Respiratory Action in a Horse.

By M. Levrat, *Vet. Surgeon, Lausanne.*

On the 20th of April, 1830, I was called in to see a draught mare, of the Swiss breed, about twenty years old, which belonged to M. Chapuy, livery stable-keeper at Lausanne.

He told me that this mare had for fifteen years been accustomed to draw a small chariot; that, on the day before, she was in good health, but that on the morning of the 20th, when the servant came to take her out of the stable in order to rub her down, he perceived that the whole of her frame was agitated by a sudden convulsive motion. He also added that she was vicious to all the other horses.

Symptoms.—The animal had scarcely any appetite; she did

not attack the other horses as she had been accustomed to do, and her limbs seemed to be a little stiff. I immediately remarked a kind of shock of the whole body produced by the extraordinary force of the action of the heart, which beat with violence against the dorso-costal region, at the superior part of the first false sides, on the left side: the shock was very evident, and appeared as if it were made on some tumour which was interposed between the heart and the sides. The violence was such as to cause an agitation of the whole frame, which could be seen at a considerable distance.

The pulsations of the heart were regular, and about fifty in a minute, and synchronous with those of the glosso-facial artery, which were of the same number. The artery was soft, the pulse regular, and offering little resistance under the finger.

The respiration presented a peculiar character. On placing my ear at the opening of the nostrils, I could hear the animal make three successive inspirations which coincided with the beats of the heart. Each of these three inspirations was followed by an expiration so short and so weak, that I could not feel the current of the air that was expired; but the fourth inspiration was followed by a strong and prolonged expiration, which was kept up during three beats of the heart; then the respiration re-commenced in the way I have just described, and continued to be regularly executed in this manner during the whole of the day. The movements of the flanks and sides were in exact accordance with this respiration.

The vessels of the conjunctiva were not injected; the temperature of the body was natural; the evacuations were as usual, except that the pellets of dung were small and hard. The animal did not attempt to lie down.

Auscultation of the chest gave me no reason to believe that hydrothorax existed; or that there was any tumour at the base of the heart, or any aneurism of the aorta.

Causes.—Unknown.

Diagnostic.—I imagined that there was some displacement of the apex of the heart which presents itself backward, either from dilatation of the ventricle, or from a rupture of the pericardium, and which permitted the heart to beat violently against the superior part of the posterior ribs.

Treatment.—Bleeding from the jugular about five pounds, emollient clysters, and spare diet.

There was nothing unhealthy about the blood.

21*st* A.M.—The animal was in the same state, with this difference, that the beats of the heart and the pulse were only forty-five in a minute, and the strong and prolonged expiration which

before took place after the fourth inspiration, now came regularly after the third: the conjunctiva was red, and its vessels injected; the temperature of the body was natural, and the limbs not so stiff.

I administered half a drachm of extract of digitalis in a bottle of warm water, with four ounces of orange-flower water; and, an hour afterwards, the same drink was repeated.

Two hours after noon the respiration was freer, not so short, and the expiration was stronger and more prolonged. It was performed in the following manner; one weak expiration, the next a little stronger, and the third stronger still, and more prolonged; then again the feeble expiration, and so on with perfect regularity. The expired air was not hotter than natural; occasionally the animal got up, stretched out its head, and raised its upper lip, as stallions frequently do. The urine flowed readily; the horse ate a little hay, and drank a moderate quantity of water whitened with flour.

Evening:—the horse was in the same state, and the pulse forty in a minute.

I administered a drachm of extract of digitalis dissolved in a bottle of warm water; and an hour afterwards repeated the dose.

Three emollient clysters were administered in the course of the day.

22*d* A.M.—The horse ate and drank as usual, and appeared to be lively; the beats of the heart were not always felt on the dorso-costal region; they were not so violent, and did not cause so great a shock over the whole frame: the pulse was fuller and harder, forty or forty-two in a minute; the respiration was freer, and almost natural; and the inspirations about twenty in a minute.

At noon I could scarcely feel the beating of the heart; the artery was full; the pulse strong, and forty in a minute; the respiration free and less accelerated.

In the evening the horse was walked about for half an hour: she ate and drank moderately, and then laid down and appeared to be well. I made her rise, had her out of the stable, and walked her about: there was no stiffness of the limbs. I then placed my hand on the dorso-costal region, where we had felt the beatings of the heart; they were no longer perceptible, nor could I feel them on the left and inferior part of the thorax. The pulsations were about thirty-six in a minute, all the bad symptoms had disappeared, and the animal seemed quite re-established.

Four days afterwards she returned to her ordinary work, which she has continued to perform ever since without seeming to be dis-

tressed; but it is remarked that she sometimes coughs when she is mounted, which she did not do before.

To-day, the 3d of May, I visited her again: she appeared to be in perfect health, and we could feel the beatings of the heart very plainly in their natural state, at the inferior part of the thorax, near to the elbow.

I thought it right to communicate this extraordinary case, which appears to me to be interesting, both from its rarity and for the opportunity which it afforded me of administering the extract of digitalis, the action of which on the motions of the heart appears to me to be certain, but the dose of which, proper for different animals, has not yet been determined.

Recueil de Méd. Vét.

Veterinary Obituary.

"Death, a necessary end,
Will come, when it will come."

DUBLIN has proved a sadly fatal station to our army veterinarians. It is not many years since that city deprived us of the benevolent, kind-hearted, and much-respected and beloved Mr. Cordeaux, Veterinary Surgeon of the Royal Artillery. Not long afterwards, Mr. Trigge, of the Scotch Greys, died suddenly in the Royal Barracks at Dublin. Since then, we have lost Mr. Sanneman, of the 10th Hussars, at the same barracks. And now we have the melancholy task of reporting the decease of Mr. John Hayward, Veterinary Surgeon of the 5th Dragoon Guards, or Carabineers, which took place last month, in the Portobello barracks, at Dublin. Poor "Jack Hayward" (the appellation he familiarly went by) will be lamented by all who knew him, and most by those who knew him best. In his regiment, in particular, we have occasion to know his loss will be severely felt, no less by a commanding officer, who reposed the greatest confidence in him, than by his brother officers, among whom he has often and often "borne off the bell,"—perhaps, poor fellow! with no little cost, at times, to himself. John Hayward had but the portion of another year to remain in order to complete his servitude of twenty years, and all in the same regiment: at which period, we have heard, he contemplated retiring from the army, and enjoying his well-earned *otium cum dignitate*. But, alas! farewell vain hopes—

"His hopes in heaven do dwell!"

The Gazette informs us that he is succeeded in his regiment by Mr. Ralston, late a cornet in the 25th Dragoons, whose name has already appeared among the contributors to our Journal.

Monthly Report of Diseases.

From December 1 to December 20, 1832, inclusive.*

THIS sketch of the proceedings of a little school is attempted, as promising to be useful both to the student and the practitioner. It will be followed, it is to be hoped, by similar records from larger schools. Detached cases like those with which the present number abounds will always be welcome; but these general records must be confined to schools of instruction, not only to avoid unpleasant or injurious comparisons between practitioners, but because *the record of a school must be a faithful one:* the student will know whether the account is an honest one, and the teacher will not dare to falsify or exaggerate.

HORSES.—Abscess in ear 1, catarrh 9, contraction 1, corns 1, curb 1, cneysted tumour 1, grease 4, laceration of eyelid 1, lameness obscure 2, lampas 1, navicular disease (neurotomy) 1, sandcrack 1, sprain in fetlock 2, staked in chest 1, thrush 1, suppurating wounds in feet 4 33

DOGS.—Asthma 1, cancer 1, canker in the ear 3, canker on the ear 1, canker in the mouth 1, catarrh 1, chorea 3, diarrhœa 4, dislocation 1, distemper 12, constipation 1, effusion between the cartilage and integument of the ear 1, epilepsy 1, fracture 1, hæmorrhoids 2, hydrothorax 1, indigestion 1, mange 4, morbid growth of nails 2, ophthalmia 2, paraphymosis 1, parturition 2, pneumonia 1, rabies 2, rheumatism 6, rheumatic fever 1, schirrous tumours 1, spasmodic colic 1, spinal injury 1, sprain of elbow joint 1, warts 1, worms 2 .. 64

CATTLE.—Redwater 1 1

CATS.—Constipation 1, distemper 1, inflammation of bowels 1 3

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Six of the cases of catarrh in the horse occurred in one stable, and at nearly the same time. There was no apparent exciting cause, except a little additional work. It seemed to be an *endemic* disease; and in one of the horses very decidedly, and in another in a slighter degree, the characteristic debility of catarrhal fever was remarked. The disease readily yielded to a copious abstraction of blood, and a few fever balls composed of digitalis, emetic tartar, and nitre.

The case of navicular disease, and the consequent operation of neurotomy, afforded a singular instance of professional irresolution or incapacity. The horse had long been groggy in both legs, and, with much difficulty, the owner was prevailed on to let the excision of the nerve be performed. The horse was sent to the gentleman's seat in the country, in order that it might be turned out as soon as might be after the operation. It was cast by the village practitioner—kept down a full hour—operated upon, as it was supposed—and liberated; but it was soon found that the grogginess was not in the slightest degree removed. On examining the animal it was discovered that the nerve had been excised on the inside of one leg only, and that below the fetlock. The people about the horse had sufficient penetration to find out that there was something wrong here—the owner was in great wrath—and the poor beast was brought back again to the metropolis,

* The Report will, in future, extend from the 20th of one month to the same day in the succeeding one.

and the nerves were divided on both sides of both legs, necessarily above the fetlock, so far as can be already ascertained, with good effect.

The cases of distemper in the dog were all accompanied by diarrhœa, difficult to subdue, and rapidly wasting the strength of the animal. Four of the patients died. The mucous membrane of the bowels, in this disease of almost general inflammation of the mucous surfaces, is the one that usually suffers most in the latter part of autumn and the beginning of winter. It is singular that only one case of epilepsy, and that not in a distempered dog, occurred.

The full proportion of cases of rheumatism occurred, distinguished by the stiffness of the animal's gait—his crying when he moved, or when he was lifted by the fore-legs, or the loins were pressed upon, and the belly being peculiarly drawn up and tense, and corded; the disease, however, quickly disappeared after the use of a warm bath, and the exhibition of "the castor oil mixture"—castor oil, syrup of buckthorn, and syrup of white poppies, in the proportion of 3, 2, and 1. Y.

TO CORRESPONDENTS.

To W. Percivall, Esq.

Sir,—Although not having the honour of a personal acquaintance with you, I have taken the liberty of writing, to ask your advice with regard to my anatomical pursuits. I at present stand still amidst a variety of nomenclatures; and it being evident there must be an unnecessary expenditure of time to acquire them all, I am at an entire loss to know to which to give the preference. Now, sir, provided I was to entirely devote my attention to that excellent and complete work of your's, will that nomenclature correspond with what will be required of me at the College; or, in other words, would a perfect knowledge of that suffice without entering upon any more? You are, no doubt, well aware, sir, how exceedingly perplexing it is to the mind of a student to charge the memory with a confusion of terms for the same object. Now, sir, should you not consider this request too impertinent, have the kindness, through the medium of The Veterinarian (to which publication I have been a subscriber from the commencement), to give me this information; and, at the same time, if you could recommend a system of pathology, which is adapted for the veterinary student (either in French or English), I should fee myself under an obligation to you, which I should not speedily forget.

I have the honour to be, sir, your humble and obedient servant,

John Charlis.

Croydon, Nov. 15, 1832.

P.S. Might I take the liberty of again asking a favour; that is, if there are any collateral branches of study which would facilitate my anatomical acquirements, would you, sir, have the kindness merely to mention them?

Mr. P.'s Answer.

In the construction of the systematic nomenclature introduced in my "Anatomy of the Horse," it has been a consideration with me to make the *names* accord with those in use at the Veterinary College and the medical schools in general in London; in order, thereby, to render the work as useful and facile a reference as possible to the veterinary student. With the hope of rendering the book still more extensively serviceable, I have, in the "Muscular System," inserted the *French* as well as the Latin (or English) names.

Mr. Charlis will find most information in Pathology contained in Mr. Youatt's Lectures now publishing in the "Lancet" and "The Veterinarian."

In regard to "collateral branches of study," Mr. Charlis should direct his attention to chemistry and natural philosophy, and subsequently to natural history.

Note.—I will venture to add, "much good matter is to be found in Mr. Blaine's Veterinary Outlines; but the student will shortly find most of all in Mr. Percivall's 'Pathology of the Horse,' now in active preparation."—Y.

"A Student at the College" asks, "Is the horny frog organic or inorganic? Can an inorganic body have veins, arteries, nerves, and absorbents? Can a body have absorbents, without arteries, veins, and nerves?"

It will always give us pleasure to resolve, to the best of our power, the doubts and difficulties of the "students at the College," and of students everywhere; and we invite our young friends to apply to us without scruple and without fear. We only stipulate, that the question shall deserve an answer—that it does not involve any underhand attack upon, or sneer at, to us, unknown individuals; and that our correspondents of this class will not forget one little ceremony—that of paying the postage. Now we scarcely think that the queries of this "Student" do deserve an answer: we are afraid that there is more meant by them than meets the ear; and this aforesaid little ceremony was forgotten. If the "Student" will consult the best book on Physiology, *for him* (we sadly want a *Veterinary* Physiology!), Dr. Copland's Translation of Richerand, he will find, at page 4, the distinction between organic and inorganic bodies plainly stated; and, among other points of difference, there is this, which bears upon and settles his question:—"Inorganic bodies grow from the mere juxta-position and mutual attraction of homogeneous particles; organic bodies derive their development from the constant transformation of nutritious particles into their own substance." The horny frog, therefore, is as truly, although not as perfectly, an organized body as any part of the frame.

This being one distinction between organic and inorganic bodies, the second query is altogether absurd; and one moment's thought would have told our student that absorbents would have been useless, unless there had been other vessels previously to deposit something for them to take away; and that neither the arteries, the veins, nor the absorbents, could discharge their function without the influence of the organic nerves.

There was something behind the curtain here, with which we have nothing to do, but which we do not like. The honest querist will ever be welcome; but we must not be made the cat's-paw to gratify any nonsensical pique, or contemptible malice.

S.—We have not heard of it; nor do we believe it.—Y.

We are happy to hear that Mr. Cotchiefer, of Newark, continues to use the stomach pump with great success in distention of the rumen in cattle. He deserves much credit for having introduced that mode of practice. He tells us that there have lately been a great many cases of inflammation of the udder in cows, and diarrhœa in cattle of all ages, and much hoose and redwater in his neighbourhood; and that inflammation of the lungs, and sore throats, are now prevalent among horses. We have heard a great deal of the prevalence of various diseases in many parts of the country; but in the neighbourhood of the metropolis, our patients have been more than usually healthy. In one of the cavalry barracks, containing a whole regiment, there is not, at the present moment, one sick horse. We have much to learn about these endemic complaints, and would entreat our country friends to favour us with the result of their experience and observation, and the bearing of particular circumstances of temperature, moisture, soil, r food, on the health or disease of domesticated animals. This is an unodden and a fruitful field.

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XXV.

Laryngitis—Tracheitis—Roaring—The various Causes of Roaring—Treatment.

INFLAMMATION is not long confined to the upper air-passages; other portions of the membrane are gradually involved. Here are several specimens of laryngitis. The membrane of the arytenoid cartilages, and of the whole of the larynx, are deeply ulcerated. We gradually lose the inflammation in the trachea, but the horse died from the effect of general irritation, the source or focus of which was in the larynx.

Symptoms of Laryngitis.—It is only lately that laryngitis has been recognized and described as a distinct disease by the practitioner of human medicine. It is not, then, extraordinary that we have heard so little about it in the horse. Here is a proof of its existence in that animal, and as a distinct disease; but laryngitis has not been observed with sufficient frequency or care to enable me, so satisfactorily as I could wish, to describe its distinguishing symptoms. Its approach is often insidious, scarcely to be distinguished from catarrh; but with more soreness of throat, and less enlargement of the parotid glands. There are more decided and violent paroxysms of coughing than in common catarrh, attended by a gurgling noise, which may be heard at a little distance from the horse, and which, by auscultation, is decidedly referrible to the larynx. The breathing is shorter and quicker, and evidently more painful than in catarrh; the membrane of the nose is redder; it is of a deep modena colour; and the horse shrinks and exhibits great pain when the larynx is pressed upon. The paroxysms of coughing become more frequent and violent, and the animal appears at times almost suffocated.

The value of Auscultation.—And now, gentlemen, permit me to direct your attention to that with regard to which veterinarians have been strangely silent—of the aid of which comparatively few avail themselves,—but which I have no hesitation in affirming to

be one of the most valuable of all the means we possess of discovering the seat, intensity, or results of the diseases of the respiratory passages,—I mean auscultation, or the application of the ear to the thorax or the throat of the patient, and the observation of the sound emitted by the passage of the air through different portions of them. The stethoscope would be an inconvenient instrument for us,—we could not perfectly adapt it to any part of the surface we wish to examine. The side of the face and the ear we can accurately adapt to any part.

Then what we have first to do, and that which I would urge you to make yourselves perfectly acquainted with, is the sound produced by the rush of the air through the various passages, when the animal is quiet and in health; and varying in each passage according to the calibre of the tube, its situation and its depth from the surface. The sound of health being known, a departure from it will be immediately recognized; and experience will gradually teach us the disease, or the degree of disease, which, affecting the calibre of the tube or the nature of the secretion, produces a variation in that sound.

The Respiratory Sound belonging to the Trachea.—The healthy sound proceeding from the trachea is that of a body of air passing uninterruptedly through a smooth tube of somewhat considerable calibre. I know not what better to liken it to than the sound of your forge-bellows when not too violently worked. Indeed *it is the very sound,* somewhat varying however in different horses, according to the size of the windpipe; and most certainly varying if the horse is disturbed, although in a very slight degree. Gentlemen, do not treat this with the derision and contempt with which, I am ashamed to say, I have seen auscultation regarded by some; and so regarded because they knew nothing about it. Put it to the test of experience—I ask no more.

Applied to Laryngitis.—I will suppose that you are acquainted with the healthy sound. You apply your ear to the base of the windpipe, and you find that the bellows are moderately working. The air rushes in and out without interruption. There is no disease there, and there is not much within the chest, or you would detect it by the loudness or the interruption of the murmur. You gradually creep up towards the head, and you soon begin to recognize a little gurgling rattling sound; and as you approach the larynx, it is more decided, mingled with an occasional wheezing, whistling noise. What surer proof can you have that here is the impediment to the passage of the air, proceeding from thickening of the membrane and diminution of the passage, or from increased secretion of mucus, which bubbles and rattles as the air passes? By the degree of rattling or of whistling you will judge which cause of

obstruction preponderates: in fact, you have discovered the seat and the state of the disease. Try this for yourselves, and value or discard this mode of exploration, according to the result.

Treatment.—We have then evident inflammation of the larynx, and the course to be pursued is sufficiently plain. We must bleed, and that from the jugular; for we shall then have the combined advantage of general and local bleeding. We must bleed copiously, depending indeed upon the degree of inflammation; but yet *copiously*, for we have inflammation of a *mucous membrane*; and that which we do, we must do quickly—we must adopt decisive measures, for we shall not have opportunity when the disease has altered its character, and debility succeeds. We must do that which I have already urged upon you, and shall again and again entreat you to adopt as the rule of your practice: we must not make up our minds to any determitate quantity of blood, and leave our assistant or the groom to abstract it, but we must ourselves bleed, and until the pulse flutters, or the constitution is evidently affected.

Next we must give the fever medicine already recommended; the digitalis, nitre, and emetic tartar, with aloes. We may give aloes safely, because we have ascertained that the chest is not yet implicated. To this we must add, and immediately, a blister, and a sharp one too. We are sure of the part, and we can bring our counter-irritant almost into contact with it.

Necessity of prompt Measures.—Inflammation of the larynx, if not speedily subdued, produces sad disorganization in this curiously formed and important machine. Lymph is effused,—morbidly adhesive, and speedily organized;—the membrane becomes thickened, considerably, permanently so; the submucous cellular tissue becomes œdematous; the inflammation spreads from the membrane of the larynx to the cartilages, and so we shall have difficulty of breathing, and, at length, confirmed roaring.

Inflammation of the Trachea.—Inflammation of the membrane of the larynx, and especially when it has run on to ulceration, as you see in this specimen, may rapidly spread, and involve the greater part or the whole of the lining membrane of the trachea. Auscultation will tell you when this is taking place, for the free and uninterrupted, but sonorous rush of air, will be changed for wheezing and rattling, and that in proportion as the cause of either sound exists. If the disease is extending down the trachea, you must follow it; your blister must reach as low as you can detect the rattling sound, and something beyond: your fever medicines must be administered in somewhat increased doses; and your bleeding must be repeated, if the state of the pulse does not indicate the contrary.

Generally speaking, however, although the inflammation is now approaching the chest, its extension into the trachea is not an unfavourable symptom. It covers a more extended surface, and is not so intense or untractable; it is involving a part of the frame less complicated, and where less mischief can be effected. True, if you neglect the case, it is shewing a disposition to spread that must terminate fatally; but it is coming more within your reach, and more under your command, and, the proper means being adopted, the change is rather a favourable one.

The disorganizations produced in the trachea are similar to some which I have described in the larynx. The same formation of organized bands of coagulated lymph, the same thickening of membrane, diminution of calibre, and foundation for roaring.

Roaring.

This will be the proper place to speak of that singular impairment of the respiratory function recognized by the name of roaring. It is an unnatural, loud, grunting sound made by the animal in the act of breathing in quick action, or on any sudden exertion. If the horse is briskly trotted on a level surface, and more particularly if he is hurried up hill, or if he is suddenly threatened with a stick, this peculiar sound will be heard, and cannot be mistaken. When dishonest dealers are shewing a horse that roars, but not to any great degree, they trot away gently, and, as soon as they are too far for the sound to be heard, shew off the paces of which the animal may be capable, and, on returning, gradually slacken their speed when they come within a suspicious distance. This is sometimes technically called "the dealers' long trot." On carefully listening to the *sound,* it will appear that the roaring is produced in the act of inspiration, and not in that of expiration.

It is Unsoundness.—Roaring is a very unpleasant thing to the rider, and it is unsoundness too. It is the sudden and violent rushing of the air through a tube of diminished calibre; and if the impediment, whatever it is, renders it so difficult for the air to pass in somewhat increased action, sufficient air cannot be admitted to give an adequate supply of arterialized blood in extraordinary or long-continued exertion. Therefore, as impairing the function of respiration, although, sometimes, only on extraordinary occasions, it is unsoundness. In as many cases as otherwise it is a very serious cause of unsoundness. The roarer, when hardly pressed, is often blown even to the hazard of suffocation. There are cases on record of his suddenly dropping and dying when urged to the top of his speed.

Roaring does not always materially injure the Horse.—We must not, however, take it for granted that the roarer is never good for any thing. There are few hunts in which there is not a roarer who acquits himself very fairly in the field; and it has occasionally so happened that the roarer has been the very crack horse of the hunt; yet he must be ridden with judgment, and spared a little when going up hill. There is a village in the West Riding of Yorkshire, through which a band of smugglers used frequently to pass in the dead of night: the horse of the leader, and the best horse of the troop, and on which his owner would bid defiance to all pursuit, was so rank a roarer, that he could be heard at the distance of a quarter of a mile. The clatter of all the rest scarcely made so much noise as the roaring of the captain's horse. When this got a little too bad, and he did not fear immediate pursuit, the smuggler used to halt the troop at some convenient hayrick on the roadside, and, having suffered the animal to distend his stomach with this dry food, as he was always ready enough to do, he would remount and gallop on, and, for a while, the roaring was scarcely heard. I am not compelled satisfactorily to account for this; but the loaded stomach now pressing against the diaphragm, that muscle had harder work to displace the stomach in the act of enlarging the chest and producing an act of inspiration, and accomplished it more slowly, and therefore, the air taking longer time to rush by, the roaring was diminished. I will not stop to calculate what must have been the increased labour of the diaphragm in moving the loaded stomach, nor how much sooner the horse must have been exhausted. This did not enter into the owner's reckoning, and probably the cruel application of whip and spur would deprive him of the means of forming a proper calculation of it.

Eclipse was a "high-blower." He drew his breath hard, and with apparent difficulty. The upper air-passages, perhaps those of the head, did not correspond with his unusually capacious chest; yet he was never beaten. It is said that he never met with an antagonist fairly to put him to the top of his speed; and that the actual effect of this disproportion in the two extremities of the respiratory apparatus was not thoroughly tested.

Causes of Roaring.—Then roaring proceeds from obstruction in some portion of the respiratory canal, oftenest in the larynx, for there is least room to spare, that cartilaginous box being occupied by the mechanism of the voice: next in frequency it is in the trachea, but, in fact, obstruction any where will produce it. Mr. Blaine, quoting from the French journalists, says, that a piece of riband lodged within one of the nasal fossæ produced roaring, and that even the displacement of a molar tooth has been

the *supposed* cause of it. Polypi in the nostrils have been accompanied by it. Mr. Sewell found, as an evident cause of roaring, an exostosis between the two first ribs, and pressing upon the trachea; and Mr. Percivall goes further, and says that his father repeatedly blistered and fired a horse for bad roaring, and even performed the operation of tracheotomy, and at length the roaring being so loud when the horse was led out of the stable that it was painful to hear it, the poor animal was destroyed. No thickening of the membrane was found, no disease of the larynx or trachea; but the lungs were hepatized throughout the greater part of their substance, and many of the smaller divisions of the bronchi were so compressed, that they were hardly pervious.

Bands of coagulated Lymph.—A frequent cause of roaring is the bands of coagulated lymph, of which I have already spoken, morbidly viscid and tenacious from disease, adhering firmly on one side, and by some act of coughing brought into contact with the other side, and there adhering, and becoming gradually organized, by means of the vessels which run into them from the membranes. At other times there have been rings of coagulated lymph adhering to the lining of the trachea, but not organized. In either case they form a mechanical obstruction, and will account for the roaring noise produced by the air, in hurried respiration, rushing violently through the diminished calibre. Here is a specimen of the transverse bands.

Tracheotomy as a Method of Cure.—A veterinary practitioner resorted to the operation of tracheotomy, in order to find out and get rid of this band. He fortunately cut down upon it, and removed it, and the horse was no longer a roarer. The case was published, or gradually became known, and many others resorted to the same operation, but without success. Our first veterinary writer bears a little too hard upon this operation and the operator, and says that "all the credit due to the first operator arose out of the dexterity he evinced in the operation; and that no little discredit was due to those who were silly enough to suppose that they might make a similar discovery wherever they chose to cut a hole into the windpipe." Now, with submission to my valued friend, I do think that, if the cause of roaring exists in the trachea, we may discover the very seat of it, and "cut a hole into the windpipe" directly upon it. We have that almost unerring guide, auscultation; we can, in a manner, assure ourselves of the spot whence the sound proceeds, and, consequently, where the obstruction exists. We may not find a band there; it may only be thickening of the membrane: but in obstinate and very bad cases the experiment may be worth a trial.

Thickening of the Membrane.—I have just alluded to this as a

cause of roaring, and I am inclined to believe that it is a more frequent cause than the transverse bands or coagulated rings. Observe this specimen. Here is sad ulceration, and considerable thickening. Look at this; there is no ulceration, but the membrane is thickened to a very great degree. It is double or treble its natural depth. The calibre of the trachea was here materially contracted. Look at this third preparation. Here is not so much thickening, but it is where it can least be borne. It is on the membrane covering the chordæ vocales. It lessens a passage already narrow enough, and it interferes with the requisite freedom of motion of these delicate portions of the mechanism of voice. If, for ordinary purposes, they can still contract or dilate the entrance into the body of the larynx, they cannot sufficiently expand the opening when an additional supply of air is requisite in extraordinary exertion. It is thus, perhaps, that roaring is the occasional consequence of strangles and catarrh, and other affections of the superior passages; and even as the result of pneumonia, this sensitive membrane is more likely to be inflamed and indurated than that which lines the tube of the trachea generally.

Ossification of the Cartilages.—There is scarcely a horse of five or six years old who has not a portion of the thyroid cartilage ossified: in some cases the greater part of the cartilages are becoming bony, or sufficiently so to weaken or destroy their elastic power, and consequently to render it impossible for them to be freely and fully acted upon by the delicate muscles of the larynx. The cartilages no longer freely moving, the air-passages cannot vary in size as the circumstances of the animal may sometimes require.

Chronic cough occasionally terminates in roaring. It is as likely to be inflammation of the membrane of the larynx as any part of the upper respiratory canal; and the membrane cannot be subject to chronic inflammation, without that inflammation being propagated to the cartilages, the natural consequence of which is the deposition of bony matter in them.

Coughing the Horse.—Some have imagined that the dealers' habit of *coughing* the horse, i. e. pressing upon the larynx to make him cough, in order that they may judge of the state of his wind by the sound of the cough, has produced inflammation about the larynx, which has terminated or assisted in producing roaring. That pain is given to the animal by the rough and violent way in which the object is sometimes attempted to be accomplished, is evident enough, and this must, in process of time, lead to mischief; but I can scarcely think sufficient inflammation and subsequent ossification of the cartilages would

be produced, to be a cause of roaring. The foundation of roaring,—the ossification of the cartilages,—previously existed, and produced the difficulty of compressing the larynx, so as to excite the horse to cough.

The Disease of Draught-Horses generally.—There can be no doubt of the fact, that the majority of roarers are draught-horses, and horses of quick draught. They are not only subject to the usual predisposing causes of this obstruction, but there is something superadded, something resulting from their habits or mode of work,—not indeed necessarily resulting, but that which the folly as well as cruelty of man has introduced; I mean the system of tight-reining,—the continued and painful pressure upon the larynx, by reining in the head of the horse, and teaching him to bear himself well.

The Mischief of Tight-Reining.—I acknowledge that, to a certain extent, the curb-rein is necessary; without it we should have scarcely any command over a wilful horse, and it would need a strong arm always to guide even the most willing. Without the curb-rein the horse would carry himself low; he would go carelessly along; he would become a stumbler; and if he were disposed at any time to run away, the strongest of us would have no power to stop him: but there is no necessity for the tight rein, and for the long and previous discipline to which the carriage horse is subjected. There is no necessity that the lower jaw, whether the *channel* is wide or narrow, should be so forced on the neck, that the larynx and the portion of the windpipe immediately beneath it should be flattened and bent and twisted in the strangest way, and the respiratory passage not only obstructed, but in a manner closed. Here we have a plain and palpable cause of roaring. The mischief is usually done when the horse is young. It is done in some measure by the impatience of the animal, unused to control, and suffering pain. In the violent tossing and return of his head he bruises the larynx, and produces inflammation, while the constant pressure would flatten and distort. The head of the riding horse is gradually brought to its proper place by the hands of the breaker, who skilfully increases or relaxes the pressure, and humours and plays with the mouth; but the poor carriage horse is confined by a rein that never slackens, and his nose is bent in at the expense of the larynx and windpipe; and the injury is materially increased if the head is not naturally well set on, or the neck thick, or the jaws narrow. Here are strange and almost incredible distortions of the larynx. Here are also some engravings of the larynx, in its natural and deformed state, which do credit to the ingenuity of Mr. Sewell.

Crib-biting supposed to be a Cause of Roaring.—Connected with this is the common notion that crib-biting is a cause of roaring. That is altogether erroneous. There is no possible connexion between the complaints: but one of the methods that used to be resorted to in order to cure crib-biting might be a cause of roaring, namely, the strap so tightly buckled round the upper part of the neck as to compress, and distort, and paralyze the larynx.

The Absorption of the Muscles of the Larynx.—Here, gentlemen, is a very singular preparation. It is the larynx of a roarer. You perceive the muscles of the larynx on one side as large as usual, or even larger; on the other side they have dwindled away and almost vanished. There is a little distortion of the larynx here, but no twisting of it out of its place, so that the muscles of one side could not act, and were absorbed for want of use. How do we account for this? Why, loss of muscular power, and consequent wasting of muscular substance, may be the result of the loss of nervous influence as well as the interposition of some mechanical impediment to the action of the muscles, and the French have a theory to which specimens like this give an appearance of probability.

Deficiency of Nervous Influence.—I must here recall your attention to what I stated in a former lecture of the source whence the muscles of the larynx derived their power. We threw these muscles into two classes, the dilators and the constrictors; they were both supplied with nervous influence from the par vagum, or eighth pair of nerves, one of the respiratory nerves of Sir Charles Bell, and the pneumo-gastric (a better name) of the French; but they were supplied from different branches of this nerve, the constrictors from the laryngeal branch, and the dilators from the recurrent nerve. French physiologists imagined, that if the pneumo-gastric nerve could be compressed at any part between the laryngeal and recurrent branches, the power of the dilators would be taken away on that side, and the constrictors acting on both sides, roaring, from the partial obliteration of the air-passage, would be the inevitable result. In conformity with this they have fancied that they have discovered, in horses that had been destroyed for roaring, little ganglions pressing upon the pneumo-gastric nerve at different parts of its course down the neck, and depriving the recurrent nerve on one side of its power.

I am not aware that any English veterinarian has observed this, or indeed put himself in the way of observing it. It is a very ingenious theory, and deserves serious investigation. It is possible that the pressure of the collar, as well as that of the

lower jaw, may, on this supposition, have something to do with roaring.

We cannot, however, account for the absorption of *all* the muscles, plain enough in this specimen, from the loss of power in the recurrent nerve; the constrictors ought to be bulky and florid. We must leave this appearance unexplained, unless we have recourse to the pressure of some ganglion or other body *above the origin of the laryngeal branch*, of which there is no proof.

These cases of absorption of the whole of the muscles on one side, while the larynx remains perfect, are exceedingly rare. In the far greater number of cases there is much distortion, rendering the muscles on one side useless, and therefore causing them to waste away; and even here, if we look at the inside of the larynx from below upwards, the distortion is plain enough. The wasting of the muscles, therefore, is the effect, and not the cause of that which produces roaring.

Shall I add to this long list of supposed causes of roaring the opinion of Mr. Parkinson, who says, that "the complaint is said to be in the kidneys, which seems probable from the symptom produced by a stroke across the loins, which will make him roar out; the lungs are also affected, as the wind is so bad. There is no cure, though the horse will live long and eat much; but he will do scarcely any work, and therefore is worth little more than for dogs." You may form your own opinion of this luminous theory; but I am assured that you will agree with me as to the last cause of roaring which I shall mention, and a far more prevalent one than is suspected, and that is

Hereditary Predisposition.—Facts have established this beyond the possibility of doubt. In France it is notorious, that three-fourths of the horses from Cottentin are roarers; some of them are roarers at six months old; but about La Hague and Le Bocase, not a roarer is known. There is certainly a considerable difference in the soil of the two districts; the first is low and marshy, the latter elevated and dry: but tradition traces it to the introduction of some foreign horses into Cottentin, who bequeathed this infirmity to their progeny, and the curse is not worn out.

In our own country we have as decisive a proof. There was a valuable stallion in Norfolk, belonging to Major Wilson, of Didlington. He was a great favourite, and seemed to be getting some excellent stock; but he was a roarer, and some of the breeders took alarm at this. They had occasionally too painful experience of the communication of the defects of the parent to his progeny; and they feared that roaring might possibly be among these hereditary evils. Sir Charles Bunbury was requested to obtain

Mr. Cline's opinion on the subject. Mr. Cline was a deservedly eminent human surgeon; he had exerted himself in the establishment of the Veterinary College: he was an examiner of veterinary pupils, and therefore it was supposed that he must be competent to give an opinion. He gave one, and at considerable length:—"The disorder in the horse," said he, "which constitutes a roarer, is caused by a membranous projection in a part of the windpipe, and is the consequence of that part having been inflamed from a cold, and injudiciously treated. A roarer, therefore, is not a diseased horse, for his lungs and every other part may be perfectly sound. The existence of roaring in a stallion cannot be of any consequence. It cannot be propagated any more than a broken bone, or any other accident." A fair specimen of the *horse-knowledge* of one of the best of those non-descript beings, *medical* examiners of *veterinary* pupils!

Sir Charles returned full of glee; the good people of Norfolk and Suffolk were satisfied; Major Wilson's horse was in high request; and in a few years a great part of the two counties was overrun with roarers, and many a breeder half ruined.

Treatment.—Well then, gentlemen, what are we to do with these roarers? Abandon them to their fate? No, not so; but we must take care of our own reputation, and not rashly undertake a hopeless affair. In the first place, we must obtain all the knowledge we can of the origin of the disease. Did it follow strangles, catarrh, bronchitis, or any affection of the respiratory passages? Is it of long standing? Is it now accompanied by cough or any symptom of general or local irritation? Can any disorganization of these parts be detected? Any distortion of the larynx? Did it follow breaking-in to harness? The answer to these questions will materially guide our course. If there is plain distortion of the larynx or trachea, or the disease can be associated, in point of time, with breaking-in to harness, or the coachman or proprietor has been accustomed to rein him in too tightly or too cruelly, or the sire was a roarer, have nothing to do with the case. Do not be too eager to undertake the affair, if it is a case of long standing, although clearly referrible to some previous disease. But if it is of rather recent date, and following closely on some disease with which it can be clearly connected, commence another careful examination of the patient. Is there cough? Can any heat or tenderness be detected about the larynx or trachea? Follow with your ear the course of the trachea. Is there every where the same uniform rushing noise; or on some particular spot can you detect a more forcible rushing, a wheezing or whistling, or a rattling and guggling? Is that wheezing or rattling either confined to one spot, or less sonorous

as you recede from that spot above or below, or is it diffused over a considerable portion of the trachea?

You would, I think, bleed, purge, and most certainly blister. Your ear will guide you to the part to which the blister should be applied. The physic having set, you would commence a course of fever medicines; you would consider it as a case of chronic inflammation, and to be subdued, not by excessive depletion, but by the continuance of moderate depletory measures. You would probably bleed again in less quantity; give a second dose of physic, and most certainly blister again, or keep the blister discharging by some stimulating unguent. The degree of success which attends these measures would guide you in pursuing them further. If no relief is obtained after a fortnight or three weeks, you would ponder on another mode of treatment. You would again carefully explore the whole extent of the trachea, and if you could yet refer the rattle or wheezing to the same point, you would boldly propose *tracheotomy*, for you would certainly cut upon the seat of disease.

If you found one of these organized bands, the removal of it would afford immediate relief; and if you found merely a thickened membrane, no harm would be done; or the loss of blood might abate the local inflammation. You will recollect what was said in a former lecture of the manner in which the operation of tracheotomy should be performed. You should not perfectly cut through a single ring, much less two or three; for if you do, the arch of the trachea will be destroyed, and it will there assume a sharper, roof-like shape in that place: the calibre of the tube will be materially lessened there: and if you should perchance remove one cause of roaring, you will assuredly produce another, and that a remediless one. Once more look at these tracheæ on which the operation has been performed, and see the altered shape of the tube and the certain production of roaring. If a portion only of two of the rings is excised, the remaining part of each will be sufficiently strong to retain the perfect arch-form of the trachea, and without impairment of the calibre.

Of the manner of introducing a tube into the trachea, in cases of much obstruction, I have already spoken. On the whole, you will not eagerly undertake a case of roaring; but, having undertaken it, you will give the measures that you may adopt a fair trial, remembering that, in every chronic case like this, the only hope of success depends on your perseverance.

TWO CASES OF INGUINAL HERNIA.

By Mr. W. Maw, *Thornton, near Pickering, Yorkshire.*

To the Editors of "The Veterinarian."

Gentlemen,

Having derived much interest and benefit from the numerous cases published in your valuable Journal, of which I have been since its commencement a regular reader, and having during my practice met with several cases of inguinal hernia, I herewith forward two; and if you deem them worthy of insertion, they are much at your service.

CASE I.

Mr. John Simpson, of Weldale-Beck House, near Scarborough, purchased of Mr. Osbaldeston's land agent, a chesnut mare in foal to the celebrated horse Grey Orville: she having proved herself a most extraordinary good hunter, great confidence was placed in her produce.

Early on the morning of the 7th of June last (1832), she was seen to drop a beautiful colt foal; but on account of her being very irritable and wild, it was thought proper not to approach her. On Mr. Simpson's returning to see them, however, about an hour afterwards, he was surprised to find the foal rolling about on its back, with a large tumour between its thighs.

I was immediately sent for; and on examination I found it to be a very large inguinal hernia, which I reduced with difficulty: having been successful in supporting similar herniæ with simple pads and bandages, recourse was had to them here; and I left my patient in a favourable way.

Having many miles further to ride, I purposed seeing it on my return, which happened at a late hour in the same night. On my arrival, Mr. Simpson said he had given up all hopes of its recovery, as the hernia had been down the greatest part of the day, and baffled every effort he had used to keep it up.

I found the poor animal unable to rise, the pulse quick and intermittent, the extremities cold, and the body covered with cold perspiration. I again reduced the hernia, and had it held up by the hand of an assistant until a large bason of blood was abstracted, and a dose of castor oil given: the legs were then hand-rubbed and bound up with flannel.

Fortunately a party of tinkers were encamped on the roadside, near the place, of whom I procured a plate of tin, and cut

it so as to pass up into the groin, and, having covered it with flannel and wool, it was bound tight on with soft bandages, so as to compress the ruptured part.

In a short time the foal was able to get up and suck the mare. They were both kept in a loose box for a fortnight, when the tin and bandages were removed, and they were turned out to grass. The foal was perfectly cured, and is now promising to make a very valuable horse.

The above case induced me to attempt a more certain method of treating hernia, by means of a spring truss, which I made and applied with success in the following case.

CASE II.

This was a valuable colt, three months old, the property of Putsey Dawson, Esq., Sinnington Manor House, near Kirby-moorside. The hernia was first observed a few days after birth; but it increased considerably when the foal began to eat grass, and was now become so large as to give the animal pain on moving, after sucking or distending the bowels with food; and it was still continuing to increase.

I reduced the hernia by gentle pressure, without much difficulty, but found the rupture to be large enough to admit of four fingers being passed up; and the moment the pressure of the hand was removed, the contents of the hernial sac returned.

A truss was made of spring steel, and constructed in such a manner as to keep up a continual pressure over the ruptured part, leaving the scrotum, penis, &c. perfectly at liberty. It was applied on the 2d of August, and removed on September the 4th, 1832, a complete cure having been performed. During this time the colt was kept in a loose box, and care was taken that he was not allowed too much food or water at a time, and that the truss was shortened or lengthened as seemed requisite. He was afterwards turned out to grass. Having to attend a horse at the same place, labouring under inflammation of the bowels, on November the 22d, I had the satisfaction to find the foal without a trace of its former complaint.

After having treated many cases of this kind, I now feel confidence in the above method being a certain cure when early applied.

We should be exceedingly obliged to Mr. Maw, and so, we are convinced, would the readers of our Journal, if he would favour us with an account (a drawing if he pleases) of the structure of this truss, *its bearing points,* and the mode of

bringing it securely and *permanently* to press on the part, in cases of *inguinal hernia;* for we are free to confess, that we have been accustomed to consider this mode of treatment as very difficult if not impracticable.—Edit.

A CASE OF ANASARCA FOLLOWING SEVERE CHEST AFFECTION, AND REMOVED BY THE SPARTIUM SCOPARIUM.

By Mr. J. D. Harrison, *V.S., Lancaster.*

On the 20th October last, a bay horse, belonging to Mr. P., a commercial traveller from Leeds, arrived in this town. He was observed by the ostler to refuse his food, and had a slight short cough, but no farther notice was taken of him.

21*st.*—Mr. P. drove him in his gig to a village five miles distant, and remarked that he did not go with his usual freedom and spirit; and also that he coughed a little, and still refused his food. He returned to Lancaster in the evening.

22*d.*—As the horse still would not feed, the ostler bled him, and administered a diuretic ball.

24*th.*—Mr. P. started with him on his journey northwards; but had not got out of the town, when he found it useless to make any further attempt; he therefore turned again, and desired my assistance. Upon examination, it was very perceptible to me, that although at that time the lungs were not in as active a state of inflammation as they had previously been, yet they were sufficiently so to warrant me in the abstraction of blood, the pulse being 75 or 76, quick, weak, and small. A rowel was also introduced under the chest; and the intestines being rather confined, two drachms of aloes were administered. At night, the symptoms were much the same; and I abstracted six pounds of blood, and gave two drachms of aloes.

25*th.*—Pulse from 70 to 72; breathing a little better; intestines still confined; the aloes were repeated. Night: intestines slightly acted upon; pulse much as in the morning.

26*th.*—Pulse 72; breathing as usual; intestines regular: administered camphoræ ʒss, pulv. digitalis ʒss, pulv. potassæ nit. ℥ss. Night: no perceptible alteration; repeated the camphor, &c.

27*th.*—Symptoms as on the foregoing day; rowel suppurating well: gave the camphor, &c. in the morning, and again at night.

28*th.*—Symptoms as before: again administered the camphor in the morning and at night.

29*th.*—The symptoms nearly similar: gave the camphor, &c. morning and night.

30*th.*—No alteration: repeated the camphor, &c. morning and night.

31*st.*—Much as before: repeated the camphor, &c. morning and night.

Nov. 1*st.*—Considerably worse; pulse 85 or 86, very small, and wiry (from the effect of the camphor, I presumed*): gave pulv. potassæ nit. ℥j. During the day he fell down once, but did not remain long down. At night, pulse 85 or 86, quick, weak, and small, but not so wiry: gave pulv. digitalis ʒj.

2*d.*—Symptoms increased; and I thought that an effusion of fluid was likely to take place; pulse 80 to 82 or 83, quick, weak, and small: gave pulv. potassæ nit. ℥ii, pulv. digitalis, ʒj. During the day the horse fell down two or three times. At night, horned some gruel into him, he not having tasted food during the whole of the preceding time.

3*d.*—An extensive effusion of fluid in the cellular membrane under the belly; pulse quick, weak, and small: gave three pints of a strong decoction of the spartium scoparium (the common broom), with two drachms of nitre, morning and night. Horned him with gruel.

4*th.*—Symptoms not altered; skin very tight; the effusion under the belly very considerably increased; scarified it in two or three places: gave the strong decoction morning and night, and supported the horse with gruel.

5*th.*—Much as before: repeated the decoction morning and night.

6*th.*—As usual: gave the decoction morning and night. It would be tedious, and occupy too much space in THE VETERINARIAN, to continue the relation of the case thus minutely; I shall therefore briefly state, that the decoction was administered twice a-day until the 23d, when the effusion had totally disappeared; the horse recovering his appetite; the skin partly regained its natural feeling and appearance, and the animal might be considered as convalescent.

After this time he daily improved; and on the 9th of December he went from Lancaster to Bolton-le-Sands, about five miles

* We do not quite agree with this. Anasarca is either the natural progress of the previous disease, or one of nature's curative measures; but we wish that some experienced practitioner would tell us a little about this *camphor*, and whether it is good for any thing, and what it does, or is likely to do.—EDIT.

ditant; and the following morning commenced his journey to Leeds, which place he safely reached on the 11th. On the 12th, he was sent off to York fair to be sold; since which time I have heard no more respecting him.

It is well worthy of remark, that the decoction of the spartium scoparium acted in this case most powerfully, so much so, indeed, that I have frequently, during the time I was administering it, had occasion to desist whilst the horse voided his urine; and, what is still more in its favour, it produced that effect without deranging the arterial action in the slightest degree.

From my observations on the effects produced by this medicine, I am very sanguine in my expectations of its proving a valuable remedy in cases of anasarcous swellings in the extremities, &c.; and am determined to give it a fair trial on the first opportunity: and I likewise trust that some of my brother veterinarians will be induced to do the same, and let the result be known through the medium of THE VETERINARIAN.

A GLANCE AT "THE VETERINARIAN."

By OBSERVATOR.

Messieurs les Editeurs,

NEAR as we are together in residence, and often as we have the opportunity of seeing and do see each other, and I flatter myself with mutual pleasure, these are not sufficient objections in my mind to stay an idle fellow, like myself—idle, at least, when compared with you—from writing you a letter, even a long letter; providing it does not altogether fruitlessly encroach upon that which is of such value to us all, and peculiarly valuable to you,—*time.*

It has now become quite an evening's work (and a very pleasant one it is) to peruse your Veterinary Journal. Like the revolving sun, or the changing moon, it reminds us that another period is past and gone since we saw it last, and that a new one is already begun. To us all it enters the door with a hearty welcome: to those who have works of their own reflected in it, it arrives with welcome of an old friend who tickles our fancy with our own opinions.

After taking my bohea and my muffin, putting on my spectacles, and drawing the candle close beside me, and advancing my knees close to the fire, I commenced with No. 1 of the NEW SERIES of THE VETERINARIAN. "New series!" muttered I to myself; "pray, what means this?" Hunting for some expla-

nation for this among the *Contents*, I at length pause at "Editorship and Correspondence, page 45," and thither I go. Naturally expecting something "new," and looking for it with that sort of earnestness with which our minds are too apt to run after novelty, if it be only for "novelty's sake," I cannot but confess I found myself a little baulked and disappointed, when I read—"We have waited until the printer was outrageous, *hoping* that we might have been able to announce the completion of *arrangements*, &c.;" and at being referred, at the very page (45) to which I had so ardently turned, to the "February Number" for "further information," as the official scribes have it, "Well!" thought I to myself, "this is a little vexatious, to be sure, to be referred to a No. that (like an unborn child) exists yet but in embryo, and whose time of delivery, reckoning according to the calendar, will not arrive for a month to come; and, to add to my disappointment, it appears here is only an "apology" offered for the usual *bonne bouche*—the marrow-bone of the feast—"the leading article." This is rather too bad, Messrs. P. and Y. However, let us "try back;" turn again to page 1, and see how in that *et sequent* you comport yourselves, and what amends you make us, your "gentle readers," for such a stroke of disappointment—grievous vexatious stroke as it is!

Do not imagine, from what may follow, that I am going to set up for a critic, or an arbiter, on any matters on which I may, in my arrogance, presume to make a comment or so: I am by no means equal to the function; and were I, I would not undertake it, lest I might make enemies in quarters, where I trust I have, at present, friends. I am going to amuse myself simply in making some loose annotations as I read on—*en passant;* and send them afterwards to you to expunge, or not, as they may turn out worthy or unworthy of a prolonged existence.

Mr. Youatt's Lecture on the Lungs.

Division of the Lungs.—It is curious to observe, and it amuses the mind to contemplate, how diversified and even frolicsome dame Nature often appears to be in what anatomists style "the *division*" of organs. She has *divided* or cleft the brain, the lungs, the liver, the kidney, and several other glandular bodies; and she has done this according to different fashions in different animals, at the same time preserving that inflexible uniformity in each individual species, which points out to us that it was done by *design*—not the result of any accident. And this it is that sets us to work to think about it—to seek the end she had in view. Mr. Youatt tells us—"The principal intention of these

divisions is probably to adapt the substance of the lungs to the form of the cavity in which they are placed, and to enable them more perfectly to occupy and fill the thorax." No one, I should imagine, will dispute this rational explanation. When it is considered that "the cavity in which they are placed" is continually varying its dimensions, and in some degree its shape likewise; and, moreover, when we come to add to this consideration, the circumstance of there being an organ in the centre of the cavity, between the lungs, which is not only continually varying its volume, but is in perpetual motion, and as continually altering its position; and not only this, but the circumstance of there existing in the cavity large bloodvessels, which are at one moment full, at another collapsed; when we come, I repeat, to take all these things into consideration, we shall find good reason for Mr. Youatt's opinion—"that the intention of *division* was to adapt the lungs to the form of the cavity in which they are placed."

There still remains one point of view, however, in which this subject presents itself to us; and that is, we apprehend, that the all-wise hand of Nature, in packing and adapting these organs in the cavity enclosing them, had in view their *interior arrangement* at the time, as well as their adaptation to the cavity in which they are placed. When a milliner has a lady's dress to send home, and has to "pack it up in a box," she takes great care to fold it in such form and compass as to reduce its volume to all convenient dimension; at the same time she is specially concerned about preserving from all injury or disarrangement the various frills and flounces, and trimmings and stiffenings with which it is bedecked. In like manner, dame Nature has packed the lungs. She has cleft or divided them in such manner as to reduce them to all convenient shape and dimension, at the same time that she has taken every precaution against disarranging the interior mechanism, or rendering their approach and permeation inconvenient to the pulmonary vessels. Which of the two were first created, the lungs, or the cavity containing them? The lungs: and therefore it is not they that were originally fitted into the thoracic cavity;—the thorax was formed around and upon their superficies.

Mr. Spooner's Case of Strangulation of the Intestines.

Mr. Percivall has given it out as his opinion (and I feel disposed to assent to it), that the strangulation in these cases often supervenes upon what was, in the onset of the disorder, but simple cholic. Spasmodic action must, in all sorts of ways, thwart

and interfere with the natural functions of the muscular fibres of the intestines, upon the due performance of which the peristaltic action depends—that action which slowly and regularly propels onwards the contents of the bowels. Very many of these cases have been recorded within these few years past. Is it that such cases are really become more frequent: or (as your intelligent correspondent, Mr. Pritchard, observes) does it arise "from medical men having studied more the pathology of the organ?" Let it come from what cause it may, it appears to be a truth, and rather a serious one it is for some of us private practitioners. A gentleman sends for one of us to attend an invaluable horse, labouring under the "gripes," and he himself having the gripes all the time his favourite is suffering; and we, in spite of all our strenuous endeavours, unable to relieve either him or his horse; but, after all, compelled to go with a long face, and tell him his hopeful is dead; adding, by way of consolation, that it being a case of strangulated bowel, "nothing could save him;" when he (no doctor himself) turns round and looks, if he does not outright say, "then, what the de'il is the use of your pretended art?" All this is beyond a joke: and therefore let us profit, as much as we can, by Mr. Percivall's opinion, though it be but theory; and learn this from it—to call up every efficacious remedy we possess with all possible promptitude, and relax not one moment from watching and doing something as long as we conceive the case to be within human power. Let us also learn, from this same conjecture of Mr. P.'s, in cases of much endurance, to warn our employer that such may or is likely to be the nature of the case, in order that we may, at least, quench the fire of his animosity a little, though we cannot untie the knot the gripes has made in the guts of his horse.

Mr. King's Cases of Choking in Horses and Cattle.

Right welcome, my old and worthy friend, Mr. King!—It is not often you give me the treat of looking at you upon paper; but, when you do, you never fail to endow me with one more *practical* wrinkle; and that, I need not tell you, is worth two problematical ones. Your single communication to THE VETERINARIAN has put me in possession of more information on the subject of "choking" than all I have read, or even had an opportunity of seeing, has done; and I am no ignoramus (at least, in my own opinion) in these matters either. I remember an uncle of mine had a horse that had almost been choked by a potatoe: they shoved the broom handle, however (or some such thing), into his throat, and dislodged it before I (who was sent for

post-haste) arrived. In cases where the œsophagus is plugged with corn, your plan of pouring down liquids and pressing and squeezing the tube must be an excellent one; for, as you truly observe, in such a case, the probang must prove ineffectual. And your suggestion, of *forcing* the fluid down by means of a stomach-pump, is a valuable one (and particularly, as I take it for granted that every *veterinarian* now-a-days is provided with that indispensable apparatus). In the instance of the plug being a single body, a piece of turnip, mangel wurzel, &c., the probang will be the proper instrument. People who are in the habit of feeding their horses and cattle on roots may reap this useful lesson from these cases, that the roots should be *sliced*, not cut into cubic forms.

My old friend's paper is also valuable, from its entertaining accounts of the tricks of the *brutes* one has to deal with in country practice. Cramming new-laid eggs, *whole!* down horses' throats, to improve their condition, puts me in mind of a great discovery made, some years ago, by a friend of mine, which consisted in fattening pigs on *sawdust:* after several experiments he came to the conclusion, that his newly-discovered fattening feed was improved by being mixed in equal quantities with barley meal!! I wish (don't you, Messrs. Editors?) our worthy friend would oftener entertain us with some of his "scribbling;" and especially since he has left it to you to "cut away and cauterize," when you, in your editorial judgment, imagine he has "gone far enough." By this I dare say you begin to wish *I* had given the same privilege: but, remember, I do not; and therefore I beg you will insert "every and all" of *my* nonsense.

Mr. Naylor's Case of Nephritis.

The readers of THE VETERINARIAN ought to feel it an act of kindness to Mr. Naylor, in having called their attention to a subject that has, somehow or other, not been a popular one, either with you, Messrs. Editors, or with your *collaborateurs*. How comes this? Nephritis is not so very rare a disease as not to be met with often enough, or one so very unimportant as not to attract attention when it does occur. The explanation of the circumstance appears to be this: The common form Nephritis assumes is the *chronic;* which is one that (although it must occasion pain, and, we know, does inconvenience to the animal) does not lay the animal up, or *absolutely* call for medical aid. The animal may move with pain and stiffness about the loins; he may have difficulty and pain in voiding his urine, and the urine that does flow may be thick and white from purulent admixture:

but notwithstanding all this, the animal may be able to carry or draw his master, and so the nephritic disorder is not noticed. At least, the only person likely to notice it in this form is the groom; and he does not think it necessary to say any thing about it to his master, but conceives that he shall soon set all right by a dose of physic, or a few urine-balls. Many horses work on with chronic nephritic disorder to the end of their lives; others, but comparatively few in number, grow so much worse as to be unable to continue their work, and are then often said to be "chinked in the back;" for which they are turned out and rested, and that in time often recovers them, or, at least, sufficiently to enable them to recommence their work. So that it would appear that nephritic diseases are more likely to escape observation altogether than most other disorders; and when they do attract notice, are not deemed of magnitude or importance sufficient to require the doctor: on which accounts they do not seem often to come under the management of the veterinarian.

The case reported by Mr. Naylor is one of *acute* nephritis, and appears to have been produced from mechanical injury; "the pony, the day previous, having been cast in the field under some rails." Venesection, and moderate doses of aloes, combined with mucilaginous drinks, were the remedies judiciously adopted by Mr. Naylor, and with complete success.

A CASE OF ASCITES IN A COW.

By Mr. Tait, *Portsoy, V.S. to the Banffshire Farmers' Club.*

August 20, 1832.—I was requested to see a cow, the property of a farmer, which had been ill for some time. "She had not been so frank for her meat as she used to be," said the old man, "and is always blown up (hoven)". On examining the cow, I found her abdomen very much distended; and, on giving her a slight push on the side, I thought there was an undulation as if water were in the abdomen. I communicated my suspicions to the owner; "I am quite for what you will," was the reply. I had the cow thrown on her side, and introduced a small trocar and canula between the udder and umbilicus; then withdrawing the trocar, a rush of water escaped through the canula, and which on being measured amounted to eight gallons. The cow, when she got up, seemed to be faint; and as she was low in condition, I did not bleed her; but gave 1℔ of Epsom salts and ½ oz. of ginger, and ordered her some grass, and mashes of malt or bran.

21*st*.—The medicine had operated well, and the cow looked more lively, and took a little grass. I ordered ½ oz. of nitre to be given to her every alternate day for a week, and desired the owner to let me know how she went on. I did not hear of her until lately, when the owner, whom I by chance saw, told me that she was quite well again.

TWO CASES OF NEUROTOMY.

By the same.

CASE I.

A CHESNUT pony, aged, the property of R. Jopp, Esq., of Seggat, one of the fastest trotters in the north, became lame on both fore feet, more than twelvemonths ago. She had been fired and blistered round the coronets, and turned out to grass, but, when taken up, was little or none the better. On examining the pony, I found both the feet a good deal contracted, with a considerable degree of heat in the hoofs, which led me to suspect that she was affected with the navicular disease. I proposed to the owner that the nerve operation should be performed, to which he agreed. In the month of October last a portion of the nerves above the fetlock was excised in both fore legs. The mare got up sound; the wounds healed up kindly; and in the course of a month the owner was upon her back again, and she now continues doing her ordinary work, without the least symptoms of lameness.

CASE II.

November, 1832.—A brown horse, 5 years old, the property of A. Wilson, Esq., of Tochineal, about a twelvemonth ago became lame, in consequence of contraction in the off fore foot. He was blistered twice round the coronet, and turned out for a summer's run at grass: he came up sound; but the off fore foot was still considerably smaller than the other. As soon as the owner began to ride him, he again became lame. I mentioned the nerve operation, and recommended that it should be tried; to which the owner consented, as the horse was perfectly useless in his present state. I operated, as in the above case, on the off fore leg: the horse, when released, got up sound, to the surprise of the bystanders, one of whom exclaimed, "It was curious that sic a sma' wormie could ha'e made him sae terrible lame." The wounds healed up in three weeks, and the horse is now perfectly sound.

ON THE DISEASES OF THE HEART.

By Mr. Pritchard, *V.S., Wolverhampton.*

No. II.

Dilatation of the Heart.

In continuing my observations on diseases of the heart, I shall proceed, without commenting on the several cases which I purpose to lay before your readers, until the series of them is concluded.

I now beg leave to detail one of DILATATION OF BOTH SIDES OF THE HEART. The subject of this case was a good sort of three-parts-bred mare, six years old, fifteen hands and a half high, purchased by Mr. Edward Tandy, a respectable dealer in this neighbourhood, at a horse fair in North Wales, in the beginning of 1832. I was requested to examine her on the 12th of July, for a gentleman who had recently purchased her from Mr. Tandy, for she was falling away in flesh, and was suspected to have been unsound at the time of purchase.

I found her poor and lean on the rib; her belly large; and she had an unhealthy looking coat. She was running in a good pasture with other horses, where she had been several weeks, with a view of improving her condition, or rather to get her more flesh on her bones; but she continued to lose instead of gaining, notwithstanding that she appeared to feed tolerably well, and was somewhat lively. Mr. Tandy informed me she was rather thin when he bought her, but had appeared during the time she was in his hands, some three to four months, quite well, fed heartily, and worked regularly at gentle work, such as ploughing upon his farm, but that she did not thrive and grow with the meat that he gave her so much as he expected her to do; and that, if she stood in the stable a day or two, her legs swelled a little. While in the hands of the gentleman who purchased her from Mr. T., she had only done one twelve miles in harness, in consequence of her legs swelling, and œdematous swellings along the under surface of the belly occasionally appearing. I found her pulse eighty-four, rather hard and regular. The impulse of the heart indicated a change in its structure, by a loud and sonorous stroke, recognized on the right side of the chest nearly as forcibly as on the left. Its beating was regular; but an unnatural rythm, a throbbing palpitation, accompanied the stroke. The blood in the jugular veins met with considerable impediment. The slight regurgitation observed in these vessels at the bottom of the neck, in horses in health, was in

this mare considerable, and extended up the neck even to the head. The respiration was tranquil, and not quicker than in health; the pituitary and conjunctival membranes were a little flushed; under the belly was a slight collection of fluid in the cellular membrane, and the hind legs were a little œdematous. She remained in the field much in this state until the beginning of August, when a mild diarrhœa came on, and continued during a few days, and she died.

Post-mortem Examination.—I first examined the brain, but could not detect any morbid appearance in this organ. I next proceeded to the *thorax*. On opening this cavity, by raising the sternum and carefully detaching the pericardiac attachment, the heart and its sac were brought into view. The pericardium was rather thinner than usual, and capacious, containing a proper portion of healthy liquor. On slitting open the sac, the heart appeared unusually large and flabby; the cellular substance around its base was considerably elevated by effusion of lymph; the right auricle was very much enlarged, being three times the size of the left, and its walls thin; the right ventricle was dilated, but not at all in proportion with the auricle: the left auricle was not dilated, but the left ventricle was much enlarged, and its walls, especially at the extreme of the apex, so thin that I felt a little astonished that it could have contracted without rupture, for it was not more than one-eighth of an inch thick. The heart weighed ten pounds, and measured in circumference at the base, two feet seven inches. The lungs were in good health, free from engorgement and œdema.

Abdomen.—The mucous coat of the stomach was considerably reddened and vascular, as was that of the duodenum, jejunum, and ileum, excepting a foot's length of the latter intestine prior to its termination in the caput coli. The whole internal surfaces of the cœcum and colon were much inflamed; and so loaded were their mucous membranes with serous engorgement, as to resemble a lobulated continuous mass of dark-coloured jelly. The muscular and peritoneal tunics of the small and large intestines were quite healthy.

I now come to the absorbents of the bowels, and I wish I could give you an exact picture of them as they appeared to me *in situ*. The absorbents of the small intestines were generally collapsed; but those of the large intestines, the colon and cœcum especially, were prodigiously distended with lymph of a reddish yellow colour, until they arrived within sixteen or eighteen inches of the receptaculum chyli, where it became nearly all blood. The circumference of each trunk, near its termination, was not less than three inches; the whole forming a most beau-

tiful display of these vessels. The glands through which these vessels passed were natural and healthy; there was neither enlargement of them or alteration of structure. The thoracic duct contained principally blood, but was not much dilated.

The next viscus examined was the liver, which was in a state of sanguineous engorgement, and considerably enlarged: it weighed nearly thirty pounds. This extravasation of blood into the parenchyma of the liver had recently taken place. When cut into, it appeared a firm coagulum of venous blood: there were no appearances of chronic disease in the organ, and its substance was firm and not easily lacerable. I judge the hæmorrhage to have taken place from some of the ramifications of the vena portæ.

The spleen had all the appearances of health: the circulation in this viscus had suffered no obstruction. The kidnies and bladder were in a healthy state, except that some infiltration existed in the external cellular membrane of the kidnies. The peritoneum generally was very free from increased vascularity.

[To be continued.]

EDITORIAL CORRESPONDENCE.

From the late Mr. CASTLEY.

Cork Barracks, Dec. 11, 1832.

My dear Sirs,

I HAVE to acknowledge the receipt of your kind and flattering communication, by which I am glad to find that neither my friends Percivall nor Youatt have any idea of discontinuing their highly useful periodical—*the still alive and heart-whole,* though much neglected, VETERINARIAN. To your perseverance in your editorial labours, to the straightforward and uncompromising course you have pursued, and to your unremitting efforts in the cause of veterinary science and reform, the public, I think, as well as the profession, are much indebted.

I live at a considerable distance from the centre of the veterinary world, but I feel always anxious to know what is going on *about the heart.* I have often said, if the pulse would but beat in accordance there, we should march with a firm and steady step in the path of improvement; and that, too, by the surest and most unerring guide—a communion of practical facts, for which your monthly publication offers a most excellent point of union;—an emporium where a man may barter know-

ledge, may give and take; may exchange his stock in trade, and with infinite advantage both to himself and to others. There are indeed some, nay, I am ashamed to say not a few, of our fraternity, who seem to shut themselves up in a kind of hedge-hog self-sufficiency; who are careful to observe a profound mystery in every thing they do, and who affect to despise all knowledge but their own. Now, whenever I see a stable door always locked and barred, so as to exclude the inquiring eye, I begin to suspect there is some screw loose within; so mystery, in a professional man, I take in general to be a symptom of ignorance. Whenever, therefore, we see such a person, we may fairly conclude that his secrets are not worth knowing, and that both he and they are unworthy of our notice.

There are others of our professional brethren, who think that veterinary science is of too simple a nature to be exposed to the public gaze; that, in fact, by laying it open we give the staff out of our own hands. They say, that when we describe one case of any particular disease, as, for instance, inflammation of the lungs, we describe every one; and that, therefore, it is an easy matter for any person, however ignorant, to practise by our recipes, and with our directions. I say, no such thing. I would observe to such superficial persons, that there are more diseases of the chest besides inflammation of the lungs; and that it requires not only experience, but also science and tact, to discriminate with any degree of accuracy what particular tissue it is that is attacked, without which, a man must often get wrong in the application of remedies; for, to those that tell us that the treatment is the same in all, I would say, they have not made much progress, nor are they likely to make much progress, in the profession; *but many a man has mistaken his profession!* In fact, I may say, we seldom see two cases of any one disease exactly alike in every respect; many circumstances will be different, which, to be judiciously managed, may require some variation or modification in the treatment. Two things are very necessary in the practice of physic, *even upon the lower animals*, viz. a perfect knowledge of the disease, and the right employment of remedies. In the absence of such precise knowledge, medicine may, indeed, at best, be called but a conjectural art. The superficial acquaintance, therefore, with facts, relative diseases, and their remedies, as drawn from books, and books only, and applied by ignorant and unpractised persons, is a dangerous thing. Not so in the hands of the regular practitioner; he knows how to avail himself of every new fact, and to employ it in its proper place. It is for this reason that I think a periodical publication is calculated most particularly to benefit the pro-

fession, as it affords an excellent medium for the collection and communion of facts, without which, I say, we cannot make much progress.

But a house divided against itself cannot stand; and, in all our communications with each other, we should keep in mind the moral inculcated in the fable of the old man and the bundle of sticks. We have indeed enough of enmity to encounter in the world, without picking a hole in each other's coat. I hope, therefore, with you, that, in this respect at least, we are entering a new era—"that we are arrived at that desired point when controversy, ill-tempered controversy at least, may begin to cease amongst us; and that all that is now wanting to attain the common and important object of our (your) readers and ourselves, is a freer communication of practical and scientific essays." Is not the simple practical fact relative to the cure of fistulous sinuses by means of pressure, as communicated by Mr. Gray, of Edinburgh (who, by the way, I am glad to see amongst your contributors), of infinitely more importance to the interests of science, than the yet unterminated and, perhaps, interminable dispute between Mr. Dick and Mr. Cowie? But, again, let me express a hope that "envy, hatred, malice, and all uncharitableness," may cease amongst us; and that these bad passions may find no resting-place amongst our brethren, not even beyond the Tweed.

And now, my dear Youatt, allow me to congratulate you, although perhaps somewhat late, upon your appointment of "Lecturer on Veterinary Medicine at the London University." To that liberal institution we owe a debt of gratitude. Let the proud College of Edinburgh follow the example, and admit Professor Dick within its walls. But with respect to your appointment I congratulate you, not so much upon private as upon public grounds; which, by throwing open the market and causing a competition, may lead to some reform in our system. I am far from being an enemy to the Veterinary College, and I have a great regard for its professors: but I am an enemy to all corporate and exclusive monopolies, being a system calculated for the benefit of the few against the interests of the many; favouring, for the most part, the abuse of power, and tending to perpetuate patronage in particular individuals, lives, or families.

In conclusion, *Messieurs les Editeurs*, I wish you, your contributors, and readers, all a happy new year, and a successful one to THE VETERINARIAN; which I hope to see not only rally from its late too much neglected condition, but thrive and flourish for many seasons. I do not wish to see it grow larger or more expensive, but I do hope to find it every year increase in interest and valuable matter; and this it cannot fail to do, if

it meets with that support from the liberal members of the profession to which its importance is so justly entitled.

Let us, therefore, all give a pull, and, above all things, let us *pull together;* let us all join in one desirable object—improvement; and let us recollect that, in this as in most other things, union is strength. For my own part, although I confess of late I have been somewhat idle, yet I shall be happy, at times, to contribute my mite to the general stock; and I hope you will never have to call upon me in vain.

Believe me always your's sincerely,

JAMES CASTLEY.

Messrs. Percivall and Youatt.

PS.—My dear friends, if you think the inclosed address is worthy *the new year's page* of your "VALUABLE," you are welcome to make use of it in any way you like. I am not much practised in the *plastic art.* I have endeavoured, however, to put in it a little *cement.* I may not have succeeded to your expectation, but I have lost no time in responding to your call.

From Mr. W. F. KARKEEK.

To Messrs. PERCIVALL *and* YOUATT.

My dear Sirs,

IN answer to your flattering epistle, respecting the future editorship of THE VETERINARIAN, I beg to state, that I am willing to render you my assistance in any way that will tend to the improvement of your valuable publication, and to the advancement of the veterinary science. But I cannot allow myself to be considered as one of its co-editors, without expressing my regret that some other than your humble servant had not been selected to assist you in your arduous undertaking.

It is a matter of disappointment to me, and I doubt not to many others, that amidst the efforts, I will say, great efforts, that THE VETERINARIAN has made to promote our *interest,* and to maintain our *respectability,* that it has derived so little assistance from what are called the tip-top of the profession, who, standing aloof, keep their knowledge, as it were, in a manner inaccessible to the profaning touch of the commonalty, letting us see as much of it as might excite our wonder, without enabling us to estimate its real value.

"These facts are chiels that winna ding,
An' downa be disputed."

I must confess that my suspicion is excited; that they are not forward to encourage that species of instruction which tends to make the great mass of mankind the accurate judges of their merits.

From the commencement of your publication, I felt an interest in its welfare, and have done my best to support it. In the few papers on breeding, &c. &c. that have been occasionally printed in THE VETERINARIAN, I lay few claims to originality—the novelties, if there were any, were chiefly those of expression, not of idea;—for the leading arguments were nearly the same as have been promulgated in the different agricultural publications for these fifty years past. At this period of the world, a man may labour hard for originality in the cells of thought, and find in the end all his vivid fire to be no other than a ray caught from another's lamp, and, when that inspiration dies, nothing but darkness left.

> "Thus saith the Preacher:—'Nought beneath the sun
> Is new,' yet still from change to change we run."

Whoever writes, be it much or little, be it well or ill, is sure of incurring the censure of some one, and therefore I cannot expect to escape; but, on the other hand, like every other author, I hope to meet with the approbation of some one. For my own part, I am determined to please; and that ought to go a great way to insure indulgence, since it succeeds through life, nine times out of ten, with those who practise the determination. As opportunity invites, and inclination prompts, I shall send my humble scraps to THE VETERINARIAN, as long as its readers consider them worthy of notice.

I purpose then, in some of its ensuing numbers, to consider the causes of those diseases over which we have an immediate controul.

Daily observation demonstrates that the animal structure, even in its most perfect form, is liable to lesions of organization and derangement of function, producing that state of the system in which its several actions are either interrupted or attended with pain. This state is called disease. Many diseases undoubtedly have their origin from the very constitution of the animal machine. Some are hereditary; for as healthy parents naturally produce healthy children, so diseased parents as naturally produce a diseased offspring. Climate also produces many diseases; for every climate has a tendency to produce a particular disease, either from its excess of heat and cold, the mutability of the weather, or the peculiar formation of the country. These are beyond our controul; but more diseases are produced by

causes over which we have a direct influence, than by any other means.

Galen divided the causes of disease into external and internal. The external causes of diseases, according to him, are six things: 1. Air. 2. Food. 3. Motion. 4. Sleep. 5. Passions. 6. Things retained or discharged. These *non-naturals*, as they are termed by ancient nosologists, contribute to the preservation of health, when they are well disposed and properly used, but produce a contrary effect when they are imprudently used and ill disposed. Three of these—air, food, and motion—I intend to consider; for from ill ventilated stables, corrupted aliment, or improper feeding, and irregular exercise, arise some of the principal diseases to which domesticated animals are liable.

I am aware that I have chosen rather a wide field, and what may, I believe, be considered as untrodden ground, as far as The Veterinarian is concerned; but as there is a plenty of space, I shall be happy to jog on with any other steady-going "Vet" who may be inclined to travel the same road.

W. F. Karkeek.

Truro, Dec. 20th, 1832.

From Mr. Coleman.

Mr. Coleman presents his compliments to Mr. Youatt, and is much obliged to him for his offer, to allow Mr. C.'s name to appear as Co-Editor of The Veterinarian, with several other gentlemen of the highest respectability; but for the present he must beg leave to decline that honour.

Royal Veterinary College,
21st Dec. 1832.

VETERINARY MEETINGS AND TRANSACTIONS.

ANNUAL DINNER OF THE VETERINARY STUDENTS OF THE ST. PANCRAS SCHOOL, HELD ON JANUARY THE 23D, 1833.

The reporter of this pleasant meeting has rarely been absent from it, and never willingly so—indeed it was a child of his own. Mr. Sewell, a little out of place, assigned to it, at this dinner, a different source. He traced it to some pot-house assemblage for the purpose of spending certain fines. It had no such birth. It claims a far nobler origin. It was established in 1813, as the Anniversary Meeting of "The Veterinary Medical

Society" of the College. The professors attended, and Mr. Coleman presided, not only by express invitation, but in virtue of the offices which they held, as president and vice-president of the society. Mr. Coleman, who used to contribute,—unsolicited, unexpected, but gratefully received,—his quota of champagne or of cash—can bear witness to this. Mr. Coleman behaved very handsomely about these dinners; and, surely, Mr. Sewell cannot forget that, at the very first of them, he and the reporter were brother-stewards; and that he was the chairman and the reporter his vice at the very pleasant tasting and settling snuggeries, which, in the usual routine, precede and follow the grand day. It is impossible that he can forget the clever way in which he shifted from his own shoulders to those of his vice, the task or the honour, or whatever be its proper appellation, of returning thanks for the stewards: he, doubtless, occasionally chuckles at it even now, and the reporter has many a hearty laugh to himself in private about it.

The medical teachers were invited to that dinner; for whatever might be opinion, pretty plainly expressed even then by some of us, that we ought to have all we wanted within our own walls, we nevertheless owed those gentlemen much respect and gratitude.

It was "the Anniversary Dinner of the Veterinary Medical Society," and not of the students; for a considerable portion of the students did not belong to the society—they did not know whether they dared to belong to it, and certainly not more than half of them attended the first dinner. The establishment of the society was a work of no little labour, and the scheme was—to use the mildest term—somewhat doubtfully regarded, at first, by the powers that were; but they behaved honourably and well afterwards. However, the society and its dinner once countenanced by the notables, (it is shameful that that should be an inferior consideration in all these things) and working well, and contributing to the manifest improvement of the students, it very soon became a matter of course that the student must be a member of the society; and this dinner became *a dinner of the students*, yet even then not exclusively so, for in the reporter's time the stewards of that dinner were eagerly sought after among those who had passed the ordeal, and were established as practitioners in the metropolis and its neighbourhood, and so it more properly was a dinner of the profession generally.

When or how it became a dinner given by the veterinary pupils, and by them alone, to their professors, and medical teachers and examiners, the reporter does not know, and is not anxious to inquire; his only object is to vindicate the origin of the meeting.

It was established by the Medical Society of 1813, of which the present reporter was an active member; and of which he may perhaps say that he was the founder.

The present was one of the fullest assemblages of practitioners that has lately been witnessed: of the *magnates*—the "invited ones"—there were on the right of the chair, Messrs. Coleman, Sewell, Green, and Travers; and on the left, Dr. Babington and Messrs. Mayo, Cæsar Hawkins, and Spooner. Among the practitioners were—Messrs. King, sen., King, jun., J. Turner, T. Turner, W. Field, Morgan, Sibbald, Tills (Coggeshall), Bartlett (Dorking), Curtis, Bardell, Sylvester, Braby, Bennett, Youatt, and others unknown to the reporter.

Sir Astley Cooper was in the chair. A most excellent chairman he uniformly proves himself to be, and we can well appreciate the weight of his name: but we have never concealed our opinion, that he is not the proper chairman of such an assembly. We originally selected Mr. Coleman to fill that situation, or, rather, he was, *ex officio*, our chairman. It was him whom we regularly met in the lecture-room and the yard; from whom we were daily deriving instruction; and in comparison to our obligations to whom, those that we owe to Sir Astley vanish into air, thin air: it was him that we rejoiced to meet, and to offer to him, whatever might be our difference of feeling on certain points, a tribute of friendly feeling: but when Mr. Coleman resigned, and now, it would seem, permanently resigned that chair, although he was succeeded even by Sir Astley Cooper, we will tell him that, in the estimation of all his friends, the charm of the meeting was broken.

We hesitatingly hint at another reason why the chairman of the examining committee should not be the chairman of this meeting. When there were no veterinary surgeons, the appointment of mere *medical* men to conduct the examination of the veterinary students, was a matter of necessity; and we are, and ever shall be, grateful to those who undertook to conduct that examination to the best of their power; but forty years have elapsed since then, and the system of instruction must have been deplorable indeed, if *veterinary* men have not arisen, far better qualified to conduct such an examination, or worthy to be admitted as auxiliaries at least in such a work.

This is the feeling of nineteen out of twenty of the veterinary profession. The thing is easily put to the test. Let Sir Astley,—let any of his coadjutors,—call upon the talented and respectable practitioners of the veterinary art in this metropolis, or the country if they please, and ask them, "Do you think, that in the present state of veterinary science, some veterinary practitioners

ought to be added to the board of examiners?—Do you regard it as a matter of expediency, and of justice, and of common sense?" We will venture to predict what the answer will be. The answer has been given. At a meeting at which Mr. Coleman himself presided, there was not a dissentient voice on the question; and, in the name of the profession, a memorial was presented to this effect, signed by a committee appointed for the purpose, consisting of Messrs. Cherry, John Field, jun., W. J. Goodwin, Henderson, Langworthy, John and W. Percivall, and James and T. Turner.

The memorial was rejected, and, a twelvemonth afterwards, Sir Astley Cooper asserted in the chair which he this year occupied, "*That the present examining committee is the best constituted that can possibly be devised,*" and this contrary to the declared opinion of the metropolitan members of the profession, and the universal feeling of the country practitioners*. Now, with a full consciousness of Sir Astley's worth, professional and private, we have felt from the date of that memorable assertion, that it is not quite in good taste to place the declared opponent of the wishes of the whole profession at the head of such a meeting: and that it is, and somewhat unfairly, extorting from the students, for the purpose of effect, a *seeming* approbation of that against which they dare not at present say a word. Well! Sir Astley Cooper was in the chair, and, notwithstanding what we have said, we honour the feeling of unalterable friendship which induced him to fill it. He was in one of his happiest veins, and he exerted himself to make, and he succeeded in making, every one about him happy.

He gave "The King,"—"The Queen,"—"The Duke of Cambridge,"—"The Royal Family,"—"The East-India Company." This was to us a new toast, but, as the chairman explained it, a very proper one, for many of our young vets found a comfortable berth in their service.

Mr. Sewell, the medical officer of the society, returned thanks. He referred, and most justly, to the respectability and talent of the veterinary officers appointed to the different regiments of the company (the pages of THE VETERINARIAN will bear testimony to this. The names of Moorcroft, of years gone by,

* Mr. Hallen's testimony (a most honourable man and a friend of Mr. Coleman and Mr. Sewell) is decisive on this point:—"I am in the habit of associating with several country-practitioners, in extensive practice, and a credit to their profession; I have asked them, 'Do you know what is going on in London? They are going to appoint a veterinary examining committee.' 'I am very glad of it,' was the uniform reply; 'it is what has long been wanted, but I hope they will not disgust the old committee' *This is the universal feeling.*"—VETERINARIAN, vol. ii, p. 312.

and Kerr, and C. Percivall, and Ralston, and Toombs, of recent date, occur immediately to our minds): and he promised, that "as the veterinary surgeons of the East-India Company had evidently done so much to promote the progress of veterinary science, he would communicate to the world their future discoveries." The reporter was right glad to hear this, and thanks him for the pledge; and he shall choose the Medical Gazette, or the College of Physicians, or, beginning at last to be a true veterinarian, he shall select a veterinary publication; but it will go hard if the Editors of THE VETERINARIAN do not present the substance of the communication to their readers.

Next was given, "The College of Physicians," which brought up our venerable patron, Dr. Babington. He wears well, and may many a year be added to his blameless and useful life! In one respect, the blood is not quite chilled in his veins, for, if report be true, he has touched up his chemistry by attending a course of Dr. Turner's lectures, that he might the better succeed to our invaluable friend Dr. Pearson, as chemical examiner. Therefore, let the young aspirant for veterinary honours beware; yet he need not fear, for Dr. Babington's kindly feeling more than equals his old or recently acquired knowledge; and, in truth, he wanted but little of the latter. He expressed, as usual, the good wishes of the College of Physicians, and his personal ones for the prosperity of the Veterinary College.

Next followed, in due order, "The Royal College of Surgeons." Mr, Travers presented himself as the representative of that learned body. He spoke of the interest which the council took in the diffusion of true science among the students of human medicine. He spoke of the inseparable connexion between science and good practice; and he was pleased to hear and to know that the medical treatment of *that noble animal, the horse,* was systematically and scientifically taught at the Veterinary College. He would, and he was sure the College of Surgeons would, be most anxious to render their assistance in the furtherance of such an object.

To this succeeded a toast, the chairman said, which, if not drunk with enthusiasm, he should be very angry, "The Medical Teachers." To them, most certainly, whatever he may think of the mode in which he obtains this gratuitous knowledge, every student is deeply indebted. Sir Astley warmly eulogized them. Mr. Green, Professor of Surgery at "King's College," returned thanks. He too, and justly and eloquently, spoke of the union between science and reputable and successful practice. They could never be long severed. He urged on us the necessity of acquiring a competent, a minute knowledge of the anatomy

and physiology of *the horse*: it was absolutely indispensable, if we would ever require a clear conception of the nature and character and treatment of disease. He spoke of him who was ignorant of scientific principles as sailing without compass, and without light; traversing a sea filled with rocks and quicksands, which threatened him with destruction every moment: while he who possessed the light of knowledge, and was guided by the index of truth, might not only safely and joyously explore every beauty, and possess himself of every desirable object to be found on his native coast, but might launch boldly out on the ocean of experimental research, and perchance discover some new continent of science, rich with inexhaustible treasures.

Next, the chairman proposed the health of "Professor Coleman." He thought that he knew a little about this gentleman, for he had been acquainted with him some short time—four or five-and-forty years, or thereabouts,—and their friendship had never been broken or weakened during the whole of that period. He was sorry to see his old friend out of spirits to-night, and still more sorry for the cause of it. (The chairman alluded to the serious indisposition of Mrs. Coleman.)

Mr. Coleman had early distinguished himself by the variety and accuracy of his physiological researches, and had published a treatise on asphyxia which did him infinite credit. When St. Bel died, Mr. Coleman was selected as his successor; not for that profundity of anatomical knowledge which would enable him to discover, as some one had fancied he had done, nerves in the grey hairs of his father's old wig, but for a spirit of physiological inquiry, and the accuracy of his deductions from the various experiments he had instituted. He had carried the same spirit of inquiry to the study of *the horse*, and the veterinary pupil and veterinary science had been incalculably indebted to him. The profession might be said to be indebted to him, and to him alone, for the rank it held in public estimation; for it was the commission which he procured for regimental veterinary surgeons which proved their passport, and, for many a long year, the only one they could have to the highest society in the country.

Mr. Coleman, evidently labouring under deep impression, acknowledged that he was dispirited; indeed, that he had doubted whether he should have summoned sufficient resolution to have appeared among his friends; and he did not think that he should have come, had it not been for the solicitations of the beloved invalid, who assured him that she should be far happier when she knew that he was mingling with friends among whom

he ought to be seen, than by his giving up the pleasure of their society to remain by her bedside. Mr. Coleman thanked Sir Astley for the kind feeling which now and always he had expressed towards him. It was the support of such men, and the advantages which their friendship had procured for his pupils, which alone had enabled him to stand his ground. He was thankful to them; he was thankful to his students for the kind feelings which they now expressed towards him—for the uniform attention with which they invariably listened to his instructions, and for the improvement in science and practice which many of them had so evidently evinced; so that, when he might retire, he was confident that far better men would be found to occupy his situation:—yet that situation he never would quit while he felt himself able to discharge its duties, and was gratified by the esteem and support of his friends.

Mr. Coleman then rose again to propose the health of his friend, Sir Astley. His merits were too well known to need any eulogy of his, and he (Mr. C.) would content himself with alluding to the means by which his valued friend had obtained his pre-eminent reputation. To talent not often excelled, he had added industry, rarely indeed equalled. He would not deny that his friend was young while he was young—that he would enjoy a meeting like the present as much as any one—and that the hours of the night would now and then slip by uncounted, where conviviality and pleasure presided; but, the duties of the morning were never forgotten. Of every important case, Astley Cooper was the earliest and the most careful observer. Sir Astley was a splendid illustration of what industry might accomplish.

The chairman begged leave to remark, that when his friend, Mr. Coleman, told tales of days long gone by, he forgot to add that he was the invariable sharer in all these boyish pranks. And then ensued a harmless banter between the two old friends, in which certain stories were told of a strange place called Tartarus, and its attendant imps—and some unwelcome intruders—and the art of œconomy in pleasure—and playing billiards at free cost; irresistibly amusing, and leaving no sting behind; and in which, if the truth must be told, the Professor was beaten out and out. Our report, however, must be confined to graver matters.

Dr. Babington then—gallant to the last—claimed his wonted privilege of proposing the health of Lady Cooper; which Sir Astley said he should be almost afraid to acknowledge at home, for he did not know what might be the consequence to him.

"Better health to Mrs. Coleman" was then sincerely drunk.

The chairman next gave the health of Mr. Sewell, of whom it might be truly said that he was always at his post; that he was often gifted with an almost intuitive knowledge of disease; and that the students could not attend him in the discharge of his duty, without deriving from him most important information.

Mr. Sewell entered into a lengthened and satisfactory history of the progress and present state of the Royal Veterinary College. The numbers of the pupils had been progressively increasing, and their respectability and acquirements had rapidly increased. The debt of full £10,000 had been wiped away, and sufficient funds remained to secure the perpetuity of the institution. *The Veterinary College had been lately much aspersed, but that was all blown over now.* He *would be* ever found at his post, and happy to contribute to the improvement of the pupil, or the prosperity of the institution.

The chairman now proposed the health of those who had contributed to the respectability of the veterinary art by their writings and their conduct. The only gentleman whom he now recognized as coming within the scope of his toast was Mr. James Turner, and he would beg to include in the toast "the veterinary surgeons of the army."

Mr. Turner shortly returned thanks, and hoped that at some future time he might better deserve the honour now done him.

Next was given, "The other veterinary schools, and also the continental ones."

Mr. Youatt, as lecturer on veterinary medicine in a new school, returned thanks. There was room for more veterinary schools than one south of the Tweed; and while each was conducted on honourable principles, no one had a right to complain; or, rather, the true friend of the art would rejoice, for some, and not disgraceful rivalry being excited between them, veterinary science would probably be better taught. He had the pleasure of ranking the Professor of the Scottish school among his personal friends, and he would pledge himself that neither in deed nor in thought would he (Mr. Dick) ever compromise the art he taught. Veterinary science deserved yet better men to plead her cause and unfold her worth. With deep and unfeigned respect for the chairman and his colleagues, he would tell them, that even they did not sufficiently appreciate the value of the veterinary profession; for that when physiology would, at some future time (which in many important points it was not yet), be securely based on observation and experiment, the task would be effected by a veterinary surgeon. The human practitioner conducted his experiments almost at haphazard, not ignorant, perhaps, of the common anatomy of various animals;

but ignorant of those minute differences of tissue or arrangement which influenced function, and also the result of his experiments, and rendered them of little or no worth. It was *he alone* to whom every day afforded lessons of comparative anatomy; to whom every day displayed fresh proofs of the subtle, unsuspected, but controlling influence on function, occasioned by the minutest differences in structure; and whom, and most important of all, long habit had taught to bring this to bear on the mysteries of pathology; it was he alone who was competent to, and who would execute the task. "Therefore," he concluded, "you, gentlemen of the medical profession, who, or whose progenitors gave us, as it were, our being, and nurtured us up to our present state, do not despise us, do not trample upon us;—the time may come when we shall be able to repay our obligation to you, and even render you our debtors."

The chairman then proposed the healths of the other officers of the College, the demonstrators, Mr. Vines and Mr. Morton.

Mr. Vines was happy to hear himself at length recognized by Sir Astley Cooper, as demonstrator at the Veterinary College. For his own part, he had often wondered what he was there, and what title belonged to him; he had sometimes thought that he was mere cab-boy there. He was glad that he was now recognized as demonstrator, and he would endeavour, to the utmost of his ability, to discharge the duties of his office.

Mr. Morton said that he had no claim to the title of demonstrator. Beside his superintendence of the general accounts, records of the institution, and the pharmaceutical operations of the dispensary, he had no other claim than that of private lecturer on the principles of chemistry and materia medica. He had observed with regret, that here the education of the veterinary student had been most neglected; and although he would never lend his aid to those who had aimed at the destruction of the institution, he had presumed thus far to assist in its renovation. It gave him the greatest pleasure to find, that, to a considerable extent, he had succeeded; that his humble lectures had been attended by the greater and the most respectable part of the students, and that they had acknowledged themselves to be satisfied and improved.

Sir Astley apologized for confounding the offices of these gentlemen, and confessed that he admired, exceedingly admired, the sentiments expressed by Mr. Morton. If there was any branch of science which more than another concerned the veterinary student, it was chemistry; and particularly that division of it which concerned the soil, and its improvement, and its

produce, and rendered him useful to and in a manner identified with those among whom he would have to live.

Mr. Sibbald then craved permission to propose the healths of two old and valuable members of the profession—Messrs. King and Field, seniors.

Mr. King shortly returned thanks, disclaiming (but the truth of the disclaimer no one would allow) any title to the honour which had been conferred upon him; and Mr. W. Field, with a warmth and open-heartedness that delighted every one, made his acknowledgments.

The health of the stewards remained. They deserved this compliment; for their arrangements were admirably made.

Mr. Smith returned thanks. He gave a short and well delineated sketch of the obligations of the students to the guests, by whose company they had been honoured. A sense of these obligations had stimulated them to make their arrangements for the comfort and conviviality of the party as perfect as they could; and they were pleased and thankful that their conduct had given satisfaction.

The president then, after his usual valedictory address to the pupils, describing the four corner-stones—industry, conduct, opportunity, and perseverance—on which their prosperity could alone be securely founded, took his leave. Mr. Sewell was then called to the chair; and when we soon afterwards departed, at the witching hour of night, nothing had occurred to interrupt the pleasure and harmony of the meeting.

At the Anniversary Meeting of the Highland Society of Scotland, among other interesting reports, was one of the Edinburgh Veterinary School, conducted, under the patronage of that society, by our valued friend and coadjutor, Mr. Dick. We have great pleasure in copying it:—

"Sir John Hope, the chairman, said, that, not anticipating that circumstances would make it necessary for him to fill the place he now did, it was to have been his duty to notice the Veterinary School to the meeting. *It was very proper for them as a body, and as individuals, to promote the amelioration of the breeds of their different descriptions of cattle and other stock; but if they do not besides take the means of preserving the health of stock, they do less than their duty.* The school in question, he had the pleasure of observing, had originated in a suggestion made to the society by a very worthy citizen now in the room, Mr. Robert Johnston, and to the advantages that had resulted from it many of them have already had practical experience in different

parts of the country. From Mr. Dick, the lecturer's, report, which was read to the meeting, it appeared that during this session fifty students are attending the class. Sir John, in continuation, observed, that the committee have frequently had occasion to bespeak the society's favourable attention to the merits of Mr. Dick; and they have at present to notice a farther and very spirited instance of his zeal and enterprize, in the erection of a handsome building in Clyde Street, contiguous to the forge, which, when completed, will contain ample accommodation for his class, and museum of anatomical preparations, and a hospital for animals under treatment and cure. Sir John Hope concluded by moving the usual annual vote for the school; and, in addition, that a sum of £50 should be placed at the disposal of the Directors, to be applied by Mr. Dick in aid of the expense of fitting up the class-room and museum. Mr. Farquharson, of Invercauld, seconded the motion; and, after some observations by Mr. Boswell, of Balmuto, and others, in favour of the school, both sums were voted accordingly."

Veterinary Medical Society.

At a meeting of the Vice-Presidents and Committee of this Society, held at the King's Arms Tavern, Bridge Street, Westminster, on Thursday, January 10th, 1833, it appearing that the numbers who attended the meetings of the society had so progressively and rapidly diminished, that, for several nights, no debate could be held, and at length the room was quite forsaken; and also the funds of the society being so exhausted that, if the meetings had been duly attended, there would not have been sufficient to have discharged the expenses of the same;—it was proposed and determined, that this society should be dissolved; and notice is hereby given, that the Veterinary Medical Society is dissolved.

THE VETERINARIAN, FEBRUARY 1, 1833.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

Were not the flag of mourning now waving o'er our battlements, our sportive antagonist, "Observator," should not escape without one course at least. With such an opponent, joyous

true-hearted, the soul of honour and chivalry, it would have shaken off the weight of many a year to have broken one lance: but, at present, we have thoughts and remembrances that suit not with "jousts and tournaments;" yet we do tell him, but in such terms, and with such feelings as,

> Brother should a brother dare
> To gentle exercise and proof of arms,

that his trumpet shall not again sound at the barrier, without a ready answer from ours; and the guerdon shall be, the honestest and broadest smile on the countenance of our readers; the heartiest laugh between ourselves when the fray is o'er; and the happy consciousness that the cause—the great cause sacred to both—is benefitted, and not degraded, by contests like ours. At present we proceed to unriddle the riddle.

It could hardly be supposed that we did not deeply feel the apparent apathy with which our veterinary brethren seemed to regard the journal devoted to their interest: *seemed to regard it*—for we heard from all quarters where there was the possibility for them to reach us, expressions of the warmest approbation of the course we pursued, and good wishes for our success: but our bantling could not live on air; and while we were surrounded by friends, THE VETERINARIAN was starving. Perhaps we had no right—we began at length to think that we had no right—to be surprised or angry at this. We examined the various journals of human medicine, and we found that the most prosperous of them had quite as few, and the majority of them, fewer, *bonâ fide* correspondents than we had. Nay, one friend told us, in good bluff English, that we had no right to complain at all; that if we had the honour, and the other good things which fall to the lot of the editors (he little thought how few they were, and by how many annoyances they were more than counterbalanced), we must not look to the veterinary world to maintain our literary children for us. As the world goes, he was right; there are too many eager enough to receive the pleasure and advantage resulting from the labour of others, but who do not think they are compelled to stir a finger in the way of as-

sistance: in another sense, he was wrong; and there was a cold-heartedness about the observation which disgusted us, and we told him so as bluffly as he had lectured us.

However, we were anxious somewhat to alter the state of things; we wanted one fellow-labourer more, on whose assistance we might rely at times when the work pressed heavily upon us; whose established professional reputation would add weight to our journal; and whose known liberality and honourable feeling would be a satisfactory pledge, if it were wanted, as to the principles on which that journal would hereafter be conducted.

We were not long in searching for such a co-operator. The name of Mr. Dick, the founder of the Edinburgh school, was the first to present itself to our minds; and one of us, journeying to Edinburgh on other business, after a little cautiously feeling his way (for, in proportion to the value which we attached to his consent, would have been our mortification at a refusal) proposed the thing to Mr. Dick. The distance between us was adverted to by him as an objection; but the facilities for rapid and frequent intercourse afforded by the mail were brought forward in answer. Constant occupation was urged as a stronger objection. We had seen and gloried in the truth of this plea: the time of our friend was, indeed, fully occupied—to a less strong mind we should have said, painfully occupied—by his school and by his practice: but we replied, that it was hard if a few moments could not be stolen for a kindred purpose; and, it was asked whether that very employment did not take for granted another duty—the record of important facts; and where could they be more usefully kept than in a journal like THE VETERINARIAN? The validity of a third plea we did not, and no friend of Mr. Dick's would, allow for a single instant.

There was no coquetry about the thing; the consent of the Scottish Professor was promptly and cheerfully given.

Our ambition was now gratified; but having occasion to address Mr. Castley on a professional subject, we took the opportunity to hint at the paucity of contributors to our periodical, and begged him to think of us when inclination and leisure

served. That brought the friendly, energetic, beautiful letter, which has been inserted at p. 82. He intended it to be the leader to our last number. Little did we think that it was the last communication we, or the veterinary world, would receive from him.

Such a communication, unasked for, unexpected, was, truly welcome to us, and it gave rise to new thoughts — "We have one coadjutor already secured—a host in himself; but, if Castley enters thus warmly into our cause, may there not be others as zealous as he, and would it not be policy to bind them to us? Does not this letter call upon us to follow up what we have begun?" We sat down, and we looked anxiously over the list of our profession, and each name passed in review before us again and again. In such an enterprise we must have union—almost perfect identity of sentiment—as well as strength: it would be useless to add to the number of sticks if we could not bind them together.

There were names esteemed, beloved, that *would* strike the eye first, when we opened certain pages; and papers bearing those names had, once or twice, enriched our journal, and truly so. The writers of those papers could again enrich our journal beyond all price; but would they do so? Would they coalesce with us? Would they heartily and *laboriously* co-operate with us?

There were others, whose contributions have been more numerous, and equally valuable; but has there been no coquetry with another profession? Will they be stanch to the back-bone to THE VETERINARIAN and its noble purpose?

There were yet, others, and talented they were, too, who would fight for us through thick and thin; but should we be always able to restrain the superabundance of their honest glowing ardour in a good cause?

There were yet others talented, energetic; but they were scarcely yet known to their veterinary brethren, and it was requisite that the lapse of a few years should prove that the impassioned warmth of youth had settled into the fixed purpose of the heart. We feel it necessary to make this confession,—

candour and honour require it from us. Our readers may be assured that those were anxious meetings, when all this was discussed.

The upshot was that, *at present*, the co-editorship should be offered to our friends, Messrs. Castley and Karkeek. No begging and praying was to be used, nor had they been used with Mr. Dick: the thing was to be stated in a plain straightforward way—the cause was good, and we were paying a compliment to those we addressed.

Our letter found Castley on a sick-bed—so ill, that it was read to him only by piece-meal, and he had not the power to indite a reply. That was the unsuspected cause of the disarrangement of our plan in the last number. *On the day on which his name would have appeared at the head of the list of the editors of* THE VETERINARIAN—*the* 31*st of December,* 1832—*the publishing day—he died.*

Our friend Karkeek's prompt and welcome answer is inserted in the present number, page 85.

If, however, we were gratified when we had obtained the names of Karkeek and Dick, our wishes grew with our possessions, and we wanted to add yet another name; or, rather, we felt that there was a duty which in point of courtesy, as well as in accordance with our own inclinations and the interest of our work and the advantage of the profession, we had to perform. We had stated in our December number, that, in our opinion, "we had arrived at that desired point when controversy —ill-tempered controversy at least—may begin to cease among us:" (we will explain our meaning in this assertion presently)—we could not give a more satisfactory proof of our sincerity, than by offering to include the name of Professor Coleman in our list of Editors; at the same time, however, assuring him, that the end and object of THE VETERINARIAN,—the reform and progress of the profession,—would not be for a moment abandoned, but, we were convinced, would now be best promoted by union among its friends, and by a freer communication of individual discovery and improvement.

The answer is recorded in page 87. We will only say, that

the offer was made in good faith—that the acceptance of it would have given us pleasure—and that, in the language of Friar Bacon's head, and in reference to one expression in Mr. Coleman's reply, "*at present*," TIME still IS.

The "New Series" of THE VETERINARIAN (and does it deserve that title, friend Observator?) will therefore be conducted under the Editorship of Messrs. Dick, Karkeek, Percivall, and Youatt. How far this may contribute to the value of the work, —the substantial good matter which each number will contain,—time will shew; but one thing is certain—that these Editors stand pledged to themselves and the public, that THE VETERINARIAN shall be conducted on the same honourable uncompromising principle by which it has been hitherto characterized, and will never bring disgrace on the profession whose cause it professes to advocate.

Still our readers will want to know a little who is who? and therefore in our leading articles, and in every article connected with and involving a controversial question, the signature will designate the writer.

WE have given a tolerably full account of the Anniversary Dinner of the St. Pancras Veterinary Students.

We have uttered our sentiments freely as to the appointment of Sir Astley Cooper to the chair. We speak of him politically, and as the chairman of that meeting; and as being now, not always, an opponent of that concerning which there is scarcely a difference of opinion in the whole profession,—the propriety of a certain portion of the examiners of veterinary pupils being veterinary surgeons. The evidence of Mr. Hallen, already referred to, the advocate of Mr. Coleman, is satisfactory on this point. Of the opinion of Mr. Coleman himself on the point, we have sufficient proof. *We have heard him plead for the admission of veterinary surgeons before the governors*, and in a document now lying before us he thus expresses himself:—"You are pleased to observe that the measures I am '*now beginning* to pursue' give you satisfaction; but you and others seem to forget

that this is not the *beginning*, but the *second* effort I have made to obtain an examining committee of veterinary surgeons. It was not in my power to command success, but I did then, what I will do now, 'do more,' deserve it." That unfortunate expression, uttered by Sir Astley Cooper on the 23d of January, 1830, "The present examining committee is the best constituted that can possibly be devised," places him in direct opposition to the profession, and seemingly to the Professor too, and that on a point of vital importance—the very all in all in veterinary politics. We speak all this politically, for in respect for Sir Astley Cooper in his private and professional character we will yield to none; nay, even in this very affair, knowing it in all its bearings, we do not dislike the old attached friend, although we protest (and no man will more readily acknowledge the propriety of the protest than the worthy baronet himself) against the foe to veterinary improvement.

There was a curious similitude, which our readers cannot fail of observing, in the language in which no less than three of the "invited ones" addressed us at the meeting, with regard to the scope and bound of veterinary instruction. Collegiate instruction had reference, according to them, to the horse, *and the horse alone*. There was not, there could not be, any conspiracy in this—there could not be more meant than met the ear; but it arose from ignorance, strange ignorance, in veterinary examiners, of what is, or ought to be, the extent of the veterinary pupil's inquiries, and of the instruction communicated to him. Will the horse, except in a large town or in a cavalry regiment, be the only object entrusted to the veterinarian's care; or, although individually so, is he in the aggregate the most important one? Is there a veterinary school in Christendom beside this in which the instruction of the pupil is confined to the horse? Was it intended that it should be thus confined even here? These medical examiners of veterinary students will please for the future to remember, that a veterinary school, and, what this was intended to be, is one "in which the anatomical structure of quadrupeds *of all kinds*, horses, cattle, sheep, dogs, &c., the diseases to which they are subject, and the remedies proper to

be applied, are investigated; so that enlightened practitioners, whose study has been devoted to the veterinary art *in all its branches*, may be gradually dispersed over the kingdom."

Mr. Sewell, in returning thanks, alluded to "the aspersions which had been lately heaped on the Veterinary College, but which are now *blown over*." "Aspersions!" in other words, slanders, false accusations! Does Mr. Sewell refer to THE VETERINARIAN? For the last three years ours has been the only Veterinary Journal. Will he do us the favour to point out the particular aspersion? We challenge him to the proof. We have exposed certain abuses, omissions, neglects, in the management of that institution, and we shall recur to them again as and when our discretion may prompt; but will he shew us one "aspersion?"

We had said in our December number, that "we had arrived, or thought we had arrived, at that desired point, when controversy—ill-tempered controversy at least—might begin to cease among us." Mr. Sewell concluded from this that we were all at once so inconsistent, or weak, or contemptible, as to disclaim the principle on which our reputation had been built; and that, for the future, we should be very quiet, harmless people, and let things go on as they would, and say nothing at all about them; and then, "hallooing before he was out of the wood," he could not repress his exultation that the system of "aspersion" had "blown over." Now we will tell the worthy Assistant Professor exactly what we meant.

We have been tolerably careful observers of veterinary politics, and we have seen, of late, a tendency to reform, or at least, to improve, at head quarters. It might be a bit-by-bit reform, but it *was* a reform, and it was a progressive one; and we have lived long enough to know, that, the necessity of reform once conceded, the thing will go on, whether the old people like it or not. We saw, if not in the College where it should have been, yet in its immediate neighbourhood, an efficient school of anatomical dissections and demonstrations established, scarcely a resemblance of which had previously existed. We heard of one new disease after another, treading closely on each others' heels, acknowledged to have occasional existence, the very

names of which were scouted in our time as "the reveries of the *medical* pupil, who knew nothing of horse matters;" we heard of modes of explanation adopted which had erst been regarded with sovereign contempt; and modes of treatment, which had formerly been ridiculed without mercy: and, at the same time, many a theoretical point, whether of physiology or of pathology, was modified, and disarmed of much of its error, and more of its danger; while the three and the five months' men were gone to the tomb of all the Capulets. We had lately travelled over a very considerable portion of the kingdom; we had endeavoured to get at the sentiments of every veterinary surgeon with whom we could bring ourselves into contact; and we were not idle in doing this; and we may say, that, with exceptions comparatively very few, there was but one feeling—regret for the past,—mingled, however, with no little kindly feeling towards their old Professor,—and a deep-settled conviction of the necessity of reform, *and the rapid, unavoidable approach and perfection of it.* We may truly say, that there was scarcely an exception to this. The natural progress and termination of all this, and that at no distant period, it was impossible to mistake. Then we (neither *conservatives* nor *destructives*—but, in the happy language of our friend Morton, *renovators)* could say, *salvâ conscientiâ,* that the "time was arrived when *ill-tempered controversy* was no longer needed."

This was and is our meaning and feeling; but if we have been mistaken,—if we are designated "aspersors,"—if our disdisposition to conciliation is characterized by the elegant and designedly contemptuous expression of the "blowing over" of these aspersions,—why our path is plainly marked out for us,—a steady uncompromising exposure of abuse—and in firm but never violent language,—still, however, as heretofore,—more disposed to accomplish our object by peace than by warfare; and to receive a demanded right more as a boon than yielded, because it could no longer be retained. Even insult will not now drive us from our steady course, scarcely even to castigate the unwise and short-sighted individual who may choose to offer it.

Y.

Veterinary Jurisprudence.

RUPTURE OF THE DIAPHRAGM.

By Mr. W. A. Cartwright, *V. S., Whitchurch.*

About the 25th of June, 1831, Mr. Jebb, of Whitchurch Corn mills, purchased from Mr. Dickin, of Darleston, a large aged cart horse, sound, with the exception of being a little thick winded, and which he had been for some time; agreeing, at the same time, that the latter should keep him for a day or two to finish drawing some timber. On the 28th of June Mr. Dickin had been working him, as abovementioned; and at night delivered him to Mr. Jebb, having brought him a distance of about seven miles and half within the hour, and, on his arrival, being tipsy, he trotted and knocked him about to shew the animal's good qualities. When he was put into the stable, a bran mash was given to him, but of which he did not eat above a mouthful or two; he also ate about as much grass, which was in the cratch. Soon afterwards, it being about dusk, he was turned out, the waggoner observing to the owner, that his breathing was *very* bad.

The next morning he was taken up, when his respiration was much worse. About six at night Mr. Jebb came for me to see him: he informed me that the horse had stood up all the day with his legs wide apart; his head stretched out towards the manger, sweating much, and the respiration excessively quick and laborious, while a great noise was heard at each act of it. He had eaten nothing, nor had any thing of a remedial nature been done to him; and we had but just entered the stable when he fell down and breathed his last. When he was dead, his abdomen was quite flaccid. Mr. Jebb would not have him opened until Dickin was present.

30*th.* 9 A.M.—*Post-mortem examination.*—Much swelled. The diaphragm on the right side was torn from the ensiform cartilage of the sternum to the dorsal vertebræ, but it did not seem otherwise diseased or inflamed. The lungs appeared to be perfectly sound, and every other part of the thoracic and abdominal viscera were equally so, with the exception of the villous surface of the stomach, which was a little inflamed. The stomach contained many bots, and, as usual, two or three handsful of food; the mash he had eaten was distinctly seen in it, but not the least fresh-eaten grass.

Observations.—I think there cannot be a doubt that this horse's death was brought on by Dickin bringing him at night to Mr. Jebb's in too quick time; seven miles and a half in an hour, for a cart horse, sixteen hands and a half high, fourteen years old, in good condition, and thick winded, being certainly too rapid a pace, especially after he had been hard worked at timbering; Dickin also asserting he kept his other horse, that he rode upon, on the canter the greater part of the way.

I am inclined to believe that this was a case of rupture of the diaphragm of some standing; his usual manner of breathing renders this probable, and the supposition is confirmed by there not being any other disease to account for the symptoms and the death.

A difference arose between the parties who should sustain the loss; and, as far as I had been consulted in the case, I declared that I had not a doubt that the horse was unsound (independent of the thick wind) when Dickin *delivered* him. The seller returned a few pounds of the purchase money, asserting, at the same time, he was not compelled to do so; and the purchaser, rather than dive into the glorious uncertainties of the law, wisely said no more about it.

Veterinary Obituary.

The mourned—the loved—the lost!——CHILDE HAROLD.

MR. JAMES CASTLEY.

MR. JAMES CASTLEY was born in March, 1781, at a farm which his father rented in the neighbourhood of Kirby-Stephen, in Westmoreland; but the rent being high, and the farming business in that part of the country rarely a profitable concern, Mr. Castley, sen., who had always been considered a good judge of horses, and who was fond of buying and selling even while he was following his agricultural pursuits, abandoned the plough, a few years after the birth of James, and became a regular horse-dealer. His business was, at first, principally conducted in the country; but, in course of time, he brought his family to London, and settled there himself.

James Castley had early evinced superior ability, and was left under the care of a relative in Richmond, in Yorkshire, the Rev. John Smeddle, who then kept a grammar school in that town,

and where he laid the foundation of his future literary acquirements.

The horse trade not succeeding in London, Mr. Castley removed to Doncaster; and his family now being large, he was compelled to remove James from Richmond, and to take him home to assist him in his business; and, young as James was, a most valuable assistant he proved himself to be. There, too, he acquired that horse-knowledge which was afterwards so useful to him in his profession, and gave that peculiar and invaluable character to his writings and his practice.

Misfortune, however, seemed to pursue the Castleys: the father totally failed at Doncaster, and James and the rest of the family were thrown on the world. Some years had now passed since our friend had been the main prop of his father's business; and, living among horses, the determination was gradually and irrevocably formed that he would become a veterinary surgeon. He had too strong a mind to be driven from his purpose, even by this calamity: his industry and his honourable conduct had obtained him friends; and with little else to depend upon but their recommendation, and the resources of his own mind, he came to London, and entered himself at the Veterinary College.

Some of these friends had power, and the army was pointed out to him as the sphere in which his professional acquirements would probably best serve him. Castley acted on the hint:—as much of the morning as he could possibly spare was given to his veterinary studies; and in the evening he recalled and improved his early classical lore, and sedulously prepared himself for the situation which he would probably be called upon to fill.

We had hoped to have gained fuller particulars of his college life, and we wrote to one from whom we thought we could have obtained them, and who we imagined would have been eager to have aided in weaving a wreath to encircle the bust of his departed friend. We are writing the obituary of the generous Castley, in whose last document he expressed a wish that no bad passions may find a resting-place among us; and therefore we will only say, that we did not receive a reply.

He obtained his diploma, and we have again and again been told, with marked credit, on the 12th of May, 1807. On the 18th of June in the same year, he was, at the recommendation of General Gwynne, appointed to the 22d regiment of cavalry, then in India; but the Duke of Cumberland, who had observed his gentlemanly conduct and professional abilities, wishing to have him in his own regiment, the 15th, he exchanged, and continued attached to that corps until the 17th of August, 1809, when he was removed to the 12th or Prince of

Wales's Royal Regiment of Lancers, and in which he remained until his death. He saw much service; he was in the Peninsular campaign—he was at Waterloo, and afterwards at Lisbon, when a small force was sent out there.

Of the manner in which he conducted himself in his regiment we have sufficient evidence in the fact, that nearly all the officers of the garrison of Cork, of which his corps then formed a part, attended his funeral; and also in the short but expressive acknowledgment of Mr. Phillips, the Adjutant of the 12th, in a letter to us,—"I may say, he has been my friend these twenty-three years." Mr. Dick describes him as "one who, of all the army veterinarians he had ever had the opportunity of being acquainted with, he esteemed the most."

Of his conduct in private life we have evidence delightful to produce. Mr. Dick speaks of him as "a most agreeable and kind friend, and his whole conduct that of a gentleman;" and his brother told us, under the impression of the deepest feeling, that "during the misfortunes that pressed upon his family, no parent ever possessed a son whose affection carried him farther: his counsel and advice were ever ready and judicious; and, notwithstanding the paucity of his means, his pocket was ever open. As for myself," he continued, "I have lost a truly affectionate brother; and had I been taken away before him, my family have lost a father. I do not think any one in the world can justly reproach his memory." We can add nothing to this, except the statement of a fact, that he had, in a manner, adopted one of his brother's sons, and had destined him for his own profession; and deeply feeling, perhaps, how much he was indebted to his own classical and liberal acquirements for his cordial reception among his brother officers, he had, out of his little stipend as a veterinary surgeon, placed his nephew in the general school of the University of London, as the best preparation for future respectability.

Of his rank as a scientific and sound practitioner, let the pages of our Journal,—let the united voice of the profession, speak. This, however, is a subject too important for the rapid sketch we are here pourtraying. Hereafter we must endeavour to do justice to his merit in this particular, and after we have had opportunity to examine the numerous and valuable records which he has left behind him.

One would almost have thought that our lost friend had been aware of his approaching dissolution, when he penned the beautiful letter which this Number contains. If he had been conscious that he was giving his last advice, he could not have spoken more to the purpose. Let us listen to him. What

says he to those whom, in good faith, we have lately endeavoured to conciliate? "I feel always anxious to know what is going forward *about the heart*. I have often said, if the pulse would beat in accordance there, we should march with a firm and steady step in the path of improvement, and that, too, by the surest and most unerring guide—a communion of practical facts."

Let those "who observe a profound mystery in every thing they do, and affect to despise all knowledge but their own," and others who are averse that "veterinary science should be exposed to the public gaze," read and seriously ponder his advice to, and his censure on them; and let all remember, and strive to fulfil his parting wish and "hope;" "let envy, hatred, malice, and all uncharitableness," cease among us; let not these bad passions find a resting-place among our brethren; let us all join in one desirable object — improvement; and let us recollect that union is strength."

The tongues of dying men
Enforce attention like deep harmony.

Yea, from the table of our memory
We'll wipe away—
————————all forms, all pressures past,
And thy commandments all alone shall live
Within the book and volume of our brain—
Unmixed with baser matter.

Mr. JAMES WATT, *of Edinburgh.*

Our readers will recollect a case of perforation of the nasal bone, in suspected glanders, reported by this gentleman in the fourth volume of The Veterinarian. He was a young man of very promising abilities; he had a good business, and might have done exceedingly well; he had many good qualities about him, private and social—and he might have been prosperous, respected, beloved; but of late years he had mixed too freely with convivial society, and his constitution sunk under the baneful influence of the habits which he had insensibly but irrevocably formed. Another lesson, and of another kind, for the young practitioner.

Miscellanea.

Extraordinary Faculty of Dogs.

ON my asking the Ayah one evening what made the dogs bark so vehemently? with a look of terror she exclaimed, "The deevils, ma'am! dog see deevils, know deevils—always bark;" so that when they are supposed to bay the moon for mere pastime, perhaps, that is to say, if our English dogs are as gifted as their Hindoo brethren, they are, in fact, barking at his infernal majesty.—*Mrs. Col. Elwood's Travels to India.*

Monthly Report of Diseases.

From December 21, 1832, *to January* 20, 1833, *inclusive.*

Horses.—Remaining under treatment.....	4	
Broken knees bad, but joint not open 1, catarrh 4, catarrhal fever 1, dysuria 1, false quarter 1, grease 2, hydrothorax 1, inflamed lungs 1, injury on atlas threatening poll evil 1, navicular disease 1, opened joint (fetlock) 1, ophthalmia 1, ozena 1, pumice 1, spasmodic colic 1, sprain 3 (one fired), thrush 2*, tread 1	25	
		29
Dogs.—Remaining under treatment.....	9	
Asthma 2, cancer of eye 1, catarrh 4, compression of brain 3, constipation 2, chronic cough 1, diarrhœa 5, distemper 5, enlargement of thyroid glands 1, epilepsy 2, fever 3, fistula at root of penis 1, fracture within capsular ligament 2, fracture of the os penis 1, fungus on penis 1, gleet 1, hepitirrhœa 1, hypertrophy of eye 1, mechanical obstruction in rectum 2, morbid growth of nails 1, ophthalmia 2, parturition 4, pin embedded in tongue 1, poison 1, poison of lead 2, protrusion of eye from socket 1, psora 4, rabies 1, rheumatism 5, scirrhous tumours 2, spasmodic constriction of bowels 1, sprain of masseter muscle 1, stricture of rectum 1, superpurgation 1, worms 4 ..	71	
		80
Cat.—Periodical (monthly) illness from accumulation of hair, &c. in stomach		1
Human Beings.—Bitten by rabid dogs, and operated upon		4
		114

* This, and all foot cases recorded, are serious ones, attended by considerable lameness.

This has also proved a more than usually healthy month as it regards horses.

Distemper has materially diminished among dogs, and assumed also a different character; the two that were lost died in fits. Diarrhœa also became less frequent when the winter began to set in, and not a single case has occurred since the beginning of January.

The cases which, hesitatingly, we have ranked under "compression of the brain," deserve more attention than they have hitherto received from veterinarians. They are characterized by the dog running round and round, always in the same way, and usually with the head inclined to the side on which he turns. They all died, and nineteen out of twenty have died. This almost uniform fatality, however, has not diminished the vigour with which the disease has been attacked. We used to think that the primary disease was one of the bowels, and that the nervous system was sympathetically affected; but we have purged and purged again, until it was a moot point whether we did not lose the dog by the irritation of the mucous membrane which we produced; in no one case, however, did we produce the slightest remission of the symptoms. The inclination, however, and the strong inclination of our opinion now is, that it is primarily an affection of the head—pressure on the brain—and partial, local pressure. There was not opportunity to examine either of these dogs after death, but in every case where post-mortem examination has been practicable, we have found compression in the form of bony spiculæ, local extravasation of blood, effusion of serous fluid. There seems to be much similarity between this disease and the "gig, or goggles" in sheep; but from the secure protection afforded to the cranium by the temporal muscle, we are deprived of the means which we sometimes possess in the sheep of ascertaining the nature and the exact situation of the pressure by the softening of the cranial bones. This same defence of the skull, and provision for sufficiently strong action of the lower jaw, deprive us of much of the effect of a blister, for the brain is deeply seated, and can scarcely be sufficiently affected through such an enormous mass of muscle. We have not space for farther remark. Y.

TO CORRESPONDENTS.

Mr. Vines in our next.

THE

VETERINARIAN.

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XXVI.

Epidemic Catarrh in Horses—The Malignant Epidemic.

ALTHOUGH, gentlemen, too many veterinary practitioners have been accustomed to include nearly every affection of the chest under the convenient title of inflammation of the lungs, and to adopt one unvarying mode of treatment for all, so summary and unscientific a mode of proceeding will not satisfy you or me. I will not inquire into the cause, although I lament the prevalence, of that unfounded and injurious opinion, that the diseases of domesticated animals are few, easily understood, and easily treated; but will proceed to describe, so far as I am able, some of these morbid affections of the respiratory organs, unacknowledged in our schools—unacknowledged in some of our standard books,—acknowledged and understood, however, by our best practitioners; and which are clearly referrible to different portions of the respiratory apparatus, characterized by different symptoms, attended by different results, and demanding different treatment.

Epidemic Catarrh.

I will begin with that disease recognized under the names of influenza, distemper, catarrhal fever, and epidemic catarrh.

The Subjects of the Disease.—In the spring of the year—a cold wet spring,—and that succeeding a mild winter, and especially among young horses, and those in high condition, or made up for sale, or that have been kept in hot stables, or exposed to the usual causes of inflammation, this disease principally, and sometimes almost exclusively, prevails. Those that are in moderate work, and that are correspondingly fed, generally escape; or even when it appears in most of the stables in a narrower or wider district, horses in barracks, regularly worked and moderately fed, although not entirely exempt, are, comparatively, seldom diseased.

Symptoms.—If it has been observed from the beginning, the

attack will usually be sudden—ushered in by rigor, and that quickly succeeded by acceleration of pulse,—heat of mouth—staring coat—tucked-up belly—diminution of appetite—painful but not loud cough—heaving at the flanks—injected nose—weeping eye—dejected countenance: these are the symptoms of catarrh, but under a somewhat aggravated form.

How distinguished from Pneumonia and common Catarrh.—It clearly is not inflammation of the lungs, for there is no coldness of the extremities—no looking at the flanks—no stiff immoveable position—no obstinate standing up. It is not simple catarrh, for, as early as the second day, there is evident debility. The horse staggers as he walks.

Nature of the Disease.—It is inflammation of the respiratory passages, generally. It commences in the Schneiderian membrane, but it gradually involves the whole of the respiratory apparatus. Before the disease has been established four-and-twenty hours, there is sore throat. The horse quids his hay, and gulps his water. There is no great enlargement of the glands; the parotids are a little tumefied, the submaxillary somewhat more; but not at all equivalent to the degree of soreness. It is inflammation of the lining membrane of the pharynx, or spreading from the larynx to the posterior part of the mouth. The soreness is excessive; day after day the horse will obstinately refuse to eat. Discharge from the nose soon follows in considerable quantity, thick, very early purulent, and sometimes fœtid. The breathing is accelerated and laborious at the beginning, but does not always increase with the progress of the disease,—nay, sometimes a deceitful calm succeeds; and the pulse, quickened and full at first, soon loses its firmness, and although it usually maintains its unnatural quickness, yet sometimes it even deviates from this, and subsides to little more than its natural standard. The extremities continue to be comfortably warm, or at least the temperature is variable; and there is not in the manner of the animal, or in any one symptom, a decided reference to any particular part or spot, as the chief seat of disease.

Progress of the Disease.—Thus the malady proceeds for an uncertain period; occasionally for several days; in not a few instances, through the whole of its course; and the animal dies exhausted by extensive or general irritation: but in other cases the inflammation assumes a local determination; we have bronchitis or pneumonia, but of no very acute character, and difficult to treat from the general debility with which it is connected. Sometimes there are considerable swellings in various parts, as the chest, the belly, the extremities, and particularly the head. The brain is occasionally affected; the horse becomes stupid; the conjunctiva

grows alarmingly red; the animal becomes gradually unconscious, and delirium follows. A curious thickening is sometimes observed about the tendons—it would be mistaken for severe sprain. It is seen under the knee, or about the fetlock. It is hot and tender, and the lameness is considerable. The feet occasionally suffer severely. There has been determination to them far more violent than the original disease; separation of the laminæ and descent of the sole have ensued. You may easily imagine how roaring should be connected with epidemic catarrh; but I never knew this disease to be followed by glanders, although some writers have affirmed that this is the case. These metastases are not critical; but we are rather glad to see them, except indeed when the feet are attacked, for the disease seems inclined to shift its situation or character, and is more easily subdued.

Debility the chief Character.—The most decided character of this disease is debility. Not the stiff unwilling motion of the horse with pneumonia, and which has been mistaken for debility—every muscle being needed for the purposes of respiration, and therefore imperfectly used in locomotion—but actual loss of power in the muscular system generally. The horse staggers from the second day. He threatens to fall if you move him; he is sometimes down, permanently down, on the third or fourth day. The emaciation is rapid, extreme—the animal becomes a mere bag of bones.

Final Stage.—At length your medical treatment succeeds, or nature begins to rally. The cough somewhat subsides; the pulse assumes its natural standard; the countenance acquires a little more animation; the horse will eat a little of some choice thing; and health and strength slowly, very slowly indeed, return: but at other times, when there had been no decided change during the progress of the disease, no manageable metastasis of inflammation while there was sufficient power left in the constitution to struggle with it, a strange exacerbation of symptoms accompanies the closing scene. The extremities become deathy cold; the flanks heave; the countenance betrays greater distress; the membrane of the nose is of an intenser red; and inflammation of the substance of the lungs and congestion and death speedily follow.

At other times the redness of the nostril suddenly disappears; it becomes purple, livid, dirty brown, and the discharge is bloody, fœtid, the breath and all the excretions become fœtid too; the mild character of the disease gives way to malignant typhus: swellings, and stinking ulcers, spread over different parts of the frame; and the animal is soon destroyed.

Post-mortem Examination.—Examination after death sufficiently displays the real character of the disease, inflammation first

of the respiratory passages, and, in fatal or aggravated cases, of the mucous membranes generally. From the pharynx, to the termination of the small intestines, and often including even the larger ones, there will not be a part free from inflammation. Ulcerations will often be found in the pharynx. The larynx, and particularly the rimæ glottidis, will be thickened or ulcerated; the upper part of the trachea will be filled with adhesive spume, and the lining membrane thickened, injected, or ulcerated;—the lining tunic of the bronchi will exhibit unequivocal marks of inflammation; the substance of the lungs will be engorged, and often inflamed; the heart will partake in the same affection—its external coat will be red, or purple, or black, and its internal one will exhibit spots of ecchymosis; the pericardium will be thickened, and the pericardiac and pleuritic bags will contain an undue quantity of serous, or bloody-serous, or purulent fluid.

The œsophagus will be inflamed, sometimes ulcerated—the stomach always so; the small intestines will uniformly present patches of inflammation or ulceration. The liver will be inflamed—the spleen enlarged—no part, indeed, will have escaped; and if the malady has assumed a typhoid form in its latter stages, the universality and malignancy of the ulceration would scarcely be credible.

Epidemic.—This disease is clearly attributable to atmospheric influence, but of the precise nature of this influence we are altogether ignorant. It is some foreign injurious principle which mingles with and contaminates the air, but whence this poison is derived, or how it is diffused, we know not. It is engendered, or it is most prevalent, in cold ungenial weather; or this weather may dispose the patient for catarrh, or prepare the tissues to be affected by causes which would otherwise be harmless, or which may at all times exist.

It is most frequent in the spring of the year, but it occasionally rages in autumn and in winter. It is *epidemic;* it spreads over large districts. It sometimes pervades the whole country. Scarcely a stable escapes. Its appearance is sudden, its progress rapid. Mr. Wilkinson had 36 new cases in one day. I have been told of a celebrated practitioner in London who had nearly double that number in less than twenty-four hours.

Endemic.—At other times it is endemic. It pervades one town; one little tract of country. It is confined to spots exceedingly circumscribed. It is dependent on atmospheric agency, but these require some injurious adjuvant; or the principle of contagion must be called into play. I have known it rife enough in the lower parts of London, while in the upper and north-western districts scarcely a case occurred. Not many weeks afterwards

there was not a mews in Marylebone which did not contain some patients, while Westminster was exempt from disease; and in Marylebone I have known it to be confined to a district not a furlong square. In one extraordinary case a fifth part of the horses in a certain mews died, while there was no vestige of disease elsewhere. I recollect that, in one of our barracks, the majority of the horses on one side of the yard were attacked by epidemic catarrh, while there was not a sick horse on the other side.

Most prevalent in crowded Stables.—These prevalences, and these exceptions, are altogether unaccountable. The stables, and the system of stable management, have been most carefully inquired into in the infected and healthy districts, and no satisfactory difference could be ascertained. One fact, however, has been established, and a very important one it is to the horse proprietor as well as the practitioner. The probability of the disease seemed to be in a tenfold ratio with the number of horses inhabiting the stable. Two or three horses shut up in a comparatively close stable would escape. Out of thirty horses distributed through ten or fifteen little stables, not a horse would be affected; but in a stable containing ten or twelve horses the disease would assuredly appear, although it was proportionally larger and well ventilated. It is on this account that postmasters and horse-dealers dread its appearance. In a sickly season their stables are never free from it; and if perchance it does enter one of their largest stables, almost every horse will be affected. Therefore it is that grooms have so much dread of a distempered stable, and that the odds are so seriously affected if distemper has broken out in a racing establishment.

Contagious.—Does this lead to the conclusion that epidemic catarrh is contagious? Not necessarily, but it excites strong suspicion of it; and there are so many facts of the disease following the introduction of a distempered horse into an establishment, that we can hardly refuse to rank this disease among those that are both contagious and epidemic. It is strange what contrariety of opinion there is here between the theoretical and the practical man. I never met with a well-informed groom, or an extensive owner of horses, and who was much among them, or a country veterinary surgeon of much practice, that entertained a doubt about the matter. The shrewdest and most successful calculators are they who are most alarmed at and influenced by the report of this disease in a favourite stable; yet there are veterinary surgeons, and of deserved eminence too, who stoutly deny the contagiousness of distemper in horses. It is a subject that merits more attention than has hitherto been paid to it.

Precautions.—I would, however, advise you, gentlemen, to

adopt every necessary precaution. Remove from the stable as quickly as possible the horse that exhibits symptoms of epidemic catarrh. Remove the affected horse, and not the sound one. The apparently sound one may have the malady lurking about him, and may more widely propagate the disease.

Treatment.—Bleeding.—The medical treatment of epidemic catarrh is far from difficult. It is a disease of the mucous membrane, and of an extensive portion of it, and thus connected with much debility. It is nevertheless a febrile affection, and, for a little while, of considerable intensity. This fever must be subdued, and in a way least likely to increase the subsequent debility. Recourse must be had to the lancet, and blood abstracted at once, and that in sufficient quantity to affect the constitution. There is no fact so evident or so important in veterinary pathology, as that early and copious depletion will abate inflammatory action without permanently debilitating the system; while repeated small bleedings will weaken the constitution, and perhaps remove chronic inflammation, yet will not have the slightest effect on that which is of an acute character. Therefore bleed early, regulated by the condition of the animal, by the fullness of the pulse, and more particularly by the effect of the operation. Here, more than in any other case, we should bleed ourselves, or stand by while the animal is bled; and here also, more than in any other case, it is necessary that the orifice should be large, that the blood should flow quickly, that the pulse should falter, and that the depletion should then be immediately suspended. In proportion as you fear the possible typhoid form which the disease may assume, let your measures be prompt and decisive.

Medicine.—In this insidious disease the bowels are usually constipated. The pellets of dung are small and hard. Give that which has been recommended in catarrh,—small doses of aloes, combined with the usual fever medicine, the digitalis, nitre, and emetic tartar. If by auscultation, joined with a comparison of other symptoms, you are assured that there is little or no affection of the chest, a mild dose of physic may be exhibited; but there is some danger attending this, and the laxative doses of aloes are preferable. As soon as the fæces are pultaceous, or even before, and certainly before purging commences, omit the aperient, and continue the fever medicine, and that until the inflammatory action is evidently subdued.

Diet.—In a disease in which it is so necessary to abate fever, and yet not to weaken the system, strict attention, much stricter than the veterinarian usually enforces, or the groom dreams of, should be paid to diet. No corn must be allowed, but mashes and thin gruel. The horse will not drink gruel if he can get at

water; then let his water be entirely taken away, and a bucket of thin gruel suspended in his box. This is an excellent plan with regard to every sick horse that we do not wish to reduce too much; and when he finds that the morning and evening pass over, and his water is not offered to him, he will readily take to the gruel, and drink as much of it as is good for him. Green meat should be early offered; such as grass, tares (the latter especially), lucerne, and, above all, carrots. If these cannot be procured, a little hay may be damped, and offered morsel after morsel by the hand; and should this be refused, it may be damped with water slightly salted, when the patient will generally seize it with avidity.

Should the horse refuse to eat during the two or three first days, do not be in a hurry to drench with gruel; it will make the mouth sore, and the throat sore, and teaze and disgust: but if he should continue obstinately to refuse to feed, nutriment must be forced upon him. Good thick gruel must be horned down, or, what is better, given by means of Read's pump.

Counter-irritants.—You will often and anxiously have recourse to auscultation. You will listen for the mucous rattle, creeping down the windpipe, and entering the bronchial passages. If you cannot detect it below the larynx, you will apply a strong blister, reaching from ear to ear, and extending to the second or third ring of the trachea. If you can trace the rattle in the trachea, you must follow it,—you must blister as far as the disease has spread. This will often have an excellent effect, not only as a counter-irritant, but as rousing the languid powers of the constitution. A rowel of tolerable size between the fore-legs cannot do harm. It may act as a derivative, or it may take away a disposition to inflammation in the contiguous portion of the chest.

Fomentations.—The inflammation which characterizes the early stage of this disease is at first confined to the membrane of the mouth and the fauces. Can we apply fomentations? We shall allay irritation, and open the exhalents, and soften the texture. But how apply them here? Why to the very part by means of a hot mash; and that not thrown into the manger, over which the horse will not hold—and you cannot, to any effectual purpose, confine his head, or where he may be scalded or disgusted, or where, at all events, the bran will soon get cool—but placed in that too-much-undervalued and discarded article of stable-furniture, the nose-bag. The vapour of the water will, at every inspiration, pass over the inflamed surface. In the majority of cases relief will speedily be obtained, and that suppuration from the part so necessary to the permanent removal of

the inflammation—a copious discharge of mucus or purulent matter from the nostrils—will be hastened. If the discharge does not appear so speedily as we could wish, we can, in the same way, apply a stimulant to the part. The vapour impregnated with turpentine arising from fresh yellow deal saw-dust, used instead of bran, will have very considerable effect in quickening and increasing the suppuration. It may even be resorted to almost from the beginning, if there is not evidently much irritability of membrane.

A hood is a useful article of clothing in these cases. It increases the perspiration from the surface covering the inflamed part, a circumstance always of considerable moment.

General Treatment.—An equable warmth should be preserved, if possible, over the whole body. The hand-brush may be gently used every day, and harder and more effectual rubbing may be applied to the legs. The patient should, if possible, be placed in a loose box, in which he may toddle about, and take a little exercise, and out of which he should rarely, if at all, be taken. The exercise of which the groom is so fond in these cases, and which you must in the most peremptory terms forbid, has destroyed thousands of horses. The box should be airy, but not cold. Lay this down as a golden rule for the treatment of most chest affections. The air should be fresh and uncontaminated, but never chilly. Your object is to increase and not to repress cutaneous perspiration; to produce, if possible, a determination of blood to the skin, and not to drive it to the part already too much overloaded. The box should be airy, but sheltered and comfortable, and the clothing rather warmer than usual. These are the dictates of common sense, and your experience will confirm their propriety.

Cautious Treatment.—Well, gentlemen, I will suppose that you are proceeding with your case somewhat slowly, and not quite satisfactorily to yourselves or your employers. There is not much fever—there is little or no local inflammation; but there is great emaciation and debility, and total loss of appetite. You may lessen the quantity of the sedative, but you must not omit it altogether; the fire may not be extinguished, although for a little while concealed. There are no diseases so insidious and treacherous as these. You may lessen the quantity of fever medicine, but you must not venture on a tonic. Many a horse has been lost by the impatience of the practitioner or the owner. The concealed, half-smothered flame has burst out afresh, and consumed all before it. There is one medicine which you may give, an excellent refrigerant, and yet a mild and safe stimulant, the spirit of nitrous ether, which may be added to your half-doses

of the former medicine in the quantity of two drachms, or perhaps half an ounce. You must attend more sedulously to the feeding. Try every kind of green meat that you can obtain, particularly give carrots nicely scraped and sliced; change the food every day, as the capricious appetite prompts; if necessary, force with gruel, as thick as it will run from the horn; but give no corn, no not a morsel. The nurse, in the form of an attentive groom, will be the best doctor in this stage of the disease.

Tonics.—Are you yet making no progress? then you must venture on a tonic, but with a great deal of caution. Still administer the fever medicine, but add to each ball a drachm of gentian. When there has been much previous fever it may be prudent to prepare the way even for this, by the administration of a drachm of powdered chamomile flowers morning and night, added to the fever ball. If this compound of sedative and tonic medicine has effect, I will permit you, though unwillingly, to omit the former. Give one drachm of gentian, half a drachm of ginger, and half an ounce of the spirit of nitrous ether, in a little gruel; and this having produced its effect, the appetite being a little recalled, the horse being evidently somewhat better, do not make more haste than good speed. You may very easily give one dose of tonic medicine too much. You may kindle the fire afresh. When nature is set a going after such a disease, let her alone; or if you must continue to give medicine—if the prejudices of the master or the groom seem imperiously to require it, give the best drug your pharmacopœia now affords—a few linseed-meal balls.

I know not which is most to be dreaded, or has been the cause of most murders, playing with the disease at first, or hurrying the process of convalescence afterwards. Gentlemen, when you have lost your first horse by the injudicious use of tonics, remember what I have now told you.

The personal Attendance of the Veterinary Surgeon.—You will gather from what I have said, the paramount importance of your personal and most diligent attention to these cases. This involves the whole secret of the treatment of epidemic catarrh. Such cases you should get, if possible, into your own infirmary, where you may see your patient many times in the day; or if you must visit him at the stable of the owner, let no day pass without your early and late attendance on him. A thoroughly-qualified assistant, a veterinary surgeon cannot always afford to keep, and in some views it would not be prudent so to do. A rival in skill might turn out by-and-by a dangerous rival in practice. If you must content yourselves with the assistant who will do what you desire him, and of whose rivalry you have no fear, let your own personal attendance be exemplary, and especially let it be

so here. To the practised eye the treatment of the disease is simple enough; but there is no malady that requires closer watching, or in which a blunder would be so likely to be fatal.

The Malignant Epidemic.

Continental veterinarians describe a malignant variety or termination of this disease, and *our* imperfect history of veterinary medicine is not without its records of it. So lately as the year 1815, an epidemic of a malignant character reigned among horses. Three out of five who were attacked died. It reappeared in 1823, but was not so fatal. It was said that the horses that died were ultimately farcied; the truth was, that swellings and ulcerations with fœtid discharge appeared in various parts, or almost all over them—the swellings of the complaint we have been considering, but aggravated and malignant. Our recollection of the classic lore of our early years, will furnish us with instances of the same pest in distant times and countries. We have not forgotten the vivid description of Apollo darting his fiery arrows among the Greeks, and involving in one common destruction the human being, the mule, the horse, the ox, and the dog. Lucretius, when describing the plague at Athens, speaks of a malignant epidemic affecting almost every animal—

> Nor longer birds at noon, nor beasts at night
> Their native woods deserted; with the pest
> Remote they languished, and full frequent died:
> But chief the dog his generous strength resigned.

The Cause of the Establishment of Veterinary Schools.—In 1714 a malignant epidemic was imported from the continent, and in the course of a few months destroyed 70,000 head of cattle. It continued to visit other countries, with but short intervals, for fifty years afterwards. Out of evil, however, came good. The continental agriculturists were alarmed by this destruction of their property. The different governments participated in the terror, and veterinary schools were established, in which the anatomy and diseases of cattle might be studied, and the cause and treatment of these periodical pests discovered; and from the time that this branch of medical science began to receive the attention it deserved, these epidemics, if they have not quite ceased, have changed their character, and have become comparatively mild and manageable. As, however, they yet occur, and are far too fatal, I must endeavour to collect the symptoms, and point out the treatment of them.

Symptoms of Malignant Epidemic.—In horses the disease was almost uniformly ushered in by the prevailing symptom of

the common epidemic, inflammation of the mucous membrane of the respiratory passages, but soon involving other portions, and then ensued diarrhœa, which no art could arrest. The fever, acute at first, rapidly passed over, and was succeeded by great prostration of strength. The inflammation now spread to the cellular texture, and there was a peculiar disposition to the formation of phlegmonous tumours: sometimes there were pustular eruptions, but oftener deep-seated tumours rapidly proceeding to suppuration. Connected with this was a strong tendency to decomposition, and unless the animal was relieved by some critical flux or evacuation, malignant typhus was established, and the horse speedily sunk.

Brugnone's Account of the Epidemic of 1783.—The most satisfactory account of one of these epidemics is given us by Professor Brugnone, of Turin. It commenced with loss of appetite, staring coat, a wild and wandering look, a staggering from the very commencement: the horse would continually lie down and get up again, as if tormented by colic, and he gazed alternately at both flanks. In the moments of comparative ease, there were universal twitchings of the skin, and spasms of the limbs; the temperature of the ears and feet was variable. If there happened to be about the animal any old wound or scar from setoning or firing, it broke open, and discharged a quantity of thick and black blood. Very shortly afterwards, the flanks, which were quiet before, began to heave, the nostrils were dilated, the head extended for breath. The horse had by this time become so weak, that if he lay or fell down he could rise no more; or if he was up he would stand trembling, staggering, and threatening to fall every moment; the mouth was dry, the tongue white, and the breath fœtid; a discharge of yellow or bloody fœtid matter from the nose—fœtid blood from the anus. The duration of the disease did not usually exceed twelve or twenty-four hours; or if the animal lingered on, swellings of the head and throat and sheath and scrotum followed, and he died exhausted or in convulsions.

Post-mortem Appearances.—Black spots of extravasation were found in the cellular membrane, in the tissue of all the membranes, and on the stomach. The mesenteric and lymphatic glands were engorged, black, and gangrenous. The membrane of the nose and the pharynx was highly injected, the lungs were filled with black and frothy blood, or with black and livid spots. The brain and its meninges were unaltered.

Further History.—It commenced in March 1783. The barracks then contained one hundred and sixteen horses; all but thirteen were attacked, and seventy-eight of them died. The

horses of both the officers and men were subject to attack; and three horses from the town died, two of which had drawn the carts that conveyed the carcasses away, and the other stood under a window, from which the dung of an infected stable had been thrown out. The disease would probably have spread, but the most summary measures for arresting its progress were adopted; every horse in the town was killed that had had the slightest communication with those in the barracks. One horse was inoculated with the pus discharged from the ulcer of an infected horse, and he died. A portion of his thymus gland was introduced under the skin of another horse, and he also died.

Cause.—The disease was supposed to be connected with the food of the horses. All the oats had been consumed, and the *lolium temulentum,* or awned darnel, had been given instead. *It is said* that the darnel is used by some of our brewers to give an intoxicating quality to their malt liquor. I well recollect, some five-and-thirty years ago, when an acre or two of the Battersea-common field used to be annually sown with it, and it was jokingly said, that nobody knew what became of the crop. For fifteen days no alteration of health was perceived, and then in less than eighteen hours half of a troop perished. The stables were not crowded, and there was no improper treatment. A man disinterred some of the horses to get at the fat; swellings rapidly appeared in his throat, and he died in two days. A portion of their flesh was given to two pigs and some dogs, and they died.

M. Brugnone found that bleeding only accelerated the death of the patient. He afterwards tried, and ineffectually, acids, cordials, purgatives, vesicatories, and the actual cautery; and he frankly attributes to the power of nature the recovery of the few who survived.

Gilbert's Account of the Epidemic of 1795.—M. Gilbert describes a malignant epidemic which appeared in Paris in 1795, characterized by dulness, cough, loss of appetite, weakness, pulse at first rapid and full, and afterwards continuing rapid, but gradually becoming small, weak, and intermittent. The bowels at first constipated, and then violent purging succeeding. The weakness rapidly increasing, with fœtid breath, and fœtid evacuations. Tumours soon appeared about the limbs, under the chest, and in the head, the neck, and loins. If they suppurated and burst, the animal usually did well; but otherwise he inevitably died. The formation of these tumours was critical: if they rapidly advanced, it was considered as a favourable symptom; but if they continued obscure, a fatal termination was prognosticated.

Treatment.—Bleeding, even in an early stage, seemed here also to be injurious, and increased the debility. Physic was given, mild and nutritious food, gruel, cordials; deep incisions were made into the tumours, and the cautery applied stimulating frictions were used, but all were of little avail.

Summary of the Nature and Treatment.—I have narrated these cases at considerable length, in order to give you some idea of the nature of this disease, and because, with the exception of a short but very excellent account of the malignant epidemic in the last edition of Mr. Blaine's Veterinary Outlines, you will not find any satisfactory history of it in the writings of our English veterinarians. It is evidently a disease of the mucous membranes, both the respiratory and digestive. It is accompanied by early and great debility,—loss of all vital power,—vitiation of every secretion,—effusions and tumours every where, and it runs its course with fearful rapidity. If you saw it at its very onset, you would bleed; but if a few hours only had elapsed, you would find, with MM. Brugnone and Gilbert, that venesection would only hasten the catastrophe. You would administer stimulants mingled with opium,—the spirit of nitrous ether in doses of three or four ounces, with an ounce or more of laudanum. The quantity of opium would be regulated by the spasms and the diarrhœa. These medicines would be repeated in a few hours, combined, perhaps, with ginger and gentian. If these failed, I know not what you could do. Deep incisions into the tumours, or blisters over them, would be proper measures; but perhaps your principal attention would be directed to the arresting of the contagion. The infected would be immediately removed from the healthy. All offensive matter would be carefully cleared away, and no small portion of chloride of lime would be used in washing the animal, and particularly his ulcers; it might with great propriety be administered internally, while the stable and every thing that belonged to the patient would undergo a careful ablution with the same powerful disinfectant.

ON THE DISEASES OF THE HEART.

By Mr. Pritchard, *V.S., Wolverhampton.*

No. III.

Hydrops Pericardii.

The subject of this case was a large heavy carriage-horse, seventeen hands high, six years old, employed in slow draught by Messrs. Shipton and Co., canal carriers, of this town. On

the 1st of November, 1832, he was too ill to go to work, and I was requested to see him. I observed the following symptoms: pulse 70, rather oppressed; respiration somewhat disturbed; extremities cool; a frequent and distressing cough.

This cough had existed for a week in a milder degree, and he was considered to be a horse delicate in constitution. Messrs. Shipton usually keep their horses in high condition, and this horse was fat, and the membranes of his eye and nostril indicated plethora.

I listened to the ingress and egress of air through the bronchial tubes, but detected no sputa within them. Some inflammation, however, being present in the mucous surfaces of the larynx and bronchi, although insufficient to produce this disturbance in the heart, and evidently but concomitant or subsisting with a more important affection, I proceeded in the treatment by bleeding freely; I placed an issue in the brisket, rubbed some blister-liquid on the throat and lower part of the trachea in front of the chest, gave a laxative ball, ordered thin gruel to be offered to him frequently, a mash diet, with clothing and bandages to the legs: prior to all this, the horse was placed in a cool loose box.

2d day.—No improvement; the bleeding and laxative repeated.

3d day.—The horse is not so well as yesterday; he lies down and rises frequently. I bled again to one gallon, gave two drachms of Barbadoes aloes in a ball; the other treatment being continued as before.

4th day.—Pulse 80, cough better; respiration but little disturbed, extremities warm, eats nothing, but takes his gruel freely: digitalis ʒss every six or eight hours.

5th day.—Pulse 90; intermits one every 30th beat: the treatment as before.

6th day.—Pulse as yesterday; bowels relaxed; membranes of the eye and nose a good deal injected; lies down most of his time, but when up expresses considerable anxiety.

7th day.—Pulse 80, dung pultaceous; extremities warm, with a good flow of blood through the jugulars: no digitalis given yesterday, but repeated this evening, and gruel to drink every hour.

8th day.—Much the same as yesterday: the medicine continued, which acts freely on the kidneys.

9th day, 10 o'clock, A. M.—Pulse strong at the jaw, with an occasional intermission; the countenance is distressed; the membranes of the eye and nose vascular; the carotids are bouncing in the neck, and the heart throbs violently; the blood flows freely through the jugulars; the legs and body are warm;

respiration quiet, or certainly not so much increased, as such a pulse may have been expected to produce. I proceeded with the treatment, by way of experiment, and resolved to see the effect of again bleeding to one gallon, which he bore without any change beyond that of slightly diminishing the throbbing of the heart and carotids. As he had passed no dung the last twelve hours, I gave an enema of gruel. The digitalis is acting on the kidneys. I wished to have its full effect, and continued the ʒss ball every eight hours.

9 *o'clock, P.M.*—Takes no gruel; his mouth less parched; palpitation rather increased; shews great anxiety; lies down the moment the stable is left, and rises again the moment any one enters. The pulse in frequency and force as yesterday, and it intermits the same. Respiration tranquil, the extremities and surface of the body quite warm, and the blood flows through the jugulars as freely as if he was in perfect health: repeat the digitalis ball at eleven o'clock, and again in the morning at five.

10*th day.*—Symptoms much the same as last evening; the digitalis still acting on the kidneys, but produces no effect whatever on the heart, the intermission being the effect of compression. I continued to listen to the contractions of the auricles and ventricles; not the slightest gurgling could be observed. So powerful and loud were the pulsations of the heart, that I could not even hear the respiratory murmur of the lungs at any point of the chest. Still the respiration is quiet; the legs, ears, and surface of the body, warm: there are no symptoms of local congestion within, or serous deposition without; but it is very perceptible that the heart cannot act, on account of compression; in fact, that it is partially bound within its sac. The loud and noisy impulse is the same in the ventricle as in the auricle; their rythm of the same duration, and it exists on the one side of the heart the same as on the other; but the loud and clapping stroke renders every other thoracic movement inaudible, and here ends all the information I could obtain from auscultation. The whole frame vibrates with the shocks of the heart: the eye (the telegraph of every feeling, every apprehension, and almost every quality in the horse) is pitifully directed to the by-stander for relief. The countenance is anxious and haggard: he champs his teeth, and shakes his upper lip, and in a few more hours all will be still.

I left him to await the close of the scene, which took place about mid-day, almost without a struggle. The man in attendance informed me that the horse shewed a good vein, and his ears and legs were quite warm five minutes before he died.

Dissection.—The brain was first examined, and exhibited some

turgescence of the vessels, beyond which nothing remarkable presented itself. Anxious to see the heart, I sawed through the ribs; elevated the sternum, and brought the pericardium into view, distended with about a gallon of yellow serum. The heart looked compressed, and of an unhealthy hue; but the pericardium, forming its external vest, together with the sac, was perfectly smooth, and free from incrustation of lymph. No inflammatory blush was observable on any part of the membrane; nor did the sac contain any pus. I now examined the walls and interior of the organ; there was no thickening, no dilatation: the left ventricle presented extensive ecchymosis internally, the other cavities shewed no signs of lesion. On slitting open the bronchial tubes and trachea as high up as the thyroid cartilage, nothing beyond a trifling blush on some parts of the mucous membrane was observable. The lungs were engorged with blood, but uninflamed; the pleura, pulmonary, costal, and diaphragmatic, was free from all signs of inflammation, and the thoracic cavities without effusion. The whole abdominal and pelvic viscera were in good health, except that the mucous or sensible coat of the stomach was a good deal injected, from the exhibition of the digitalis.

[To be continued.]

A CASE OF HYDROTHORAX AND HYDROPS PERICARDII IN A BULLOCK, WITH A PIECE OF WIRE ATTACHED TO THE FIRST STOMACH.

By Mr. Tait, *V.S., Portsoy, N. B.*

Three months ago a stot, three years old, the property of Mr. Ogilvie, Tillynaught, became unwell. He bled him, and gave one lb. of Epsom salts, as his bowels were constipated, but which had little or no effect. He then repeated the dose, which operated, and the stot seemed to be better, as he commenced eating again, but not so frank as he should have done. He continued in this state for a month, when the owner observed an œdematous swelling between his fore legs. I was called to see him, and found an extensive tumour reaching from the dewlap to the ensiform cartilage. I ordered the swelling to be fomented with warm water, and I punctured it with a lancet in a great many places, after which an immense quantity of watery fluid dropped out.

The œdema was a good deal reduced by these means. I ordered him ½ oz. of nitre every alternate day for a week, and

desired the owner to continue the fomentation and puncture the swelling every morning.

Two weeks elapsed, and no abatement of the swelling having taken place, the owner wished me to see him again. The swelling was much in the same state, and I inserted four setons, two between his fore legs, and two in the dewlap, but they had no good effect.

The owner wishing him to be killed, I proposed that he should send him to my stables, which he did. The animal being very weak after his arrival, I had him fed with bran mashes, and hay, and turnips, and kept him for a fortnight; when, seeing no hopes of his recovery, as he was daily getting weaker, I had him destroyed.

On inspecting the abdomen, I found all the organs in a healthy state, with the exception of the first stomach; on the outside of which, close by the cardiac orifice, I observed a small tumour, and having opened it, I found that it contained a little matter, and a piece of twisted wire four inches in length. On opening the sternum, I found the pericardium enormously distended, and the chest contained upwards of two gallons of discoloured fluid. On cutting open the pericardium, its parietes were nearly half an inch thick, and much altered in structure, and contained about 1½ Scotch pint (3 quarts) of a cream-coloured matter.

Two questions naturally arise from the above: first, By what means was the wire conveyed where it was found? And, 2dly, What occasioned the thickening of the pericardium, and the deposit of fluid in it, as there was nothing in the chest to which its formation could be attributed?

ON THE POWER OF THE SPARTIUM SCOPARIUM IN ANASARCA, AND ON THE MEDICAL EFFECT OF CAMPHOR.

By Mr. J. D. Harrison, *V.S., Lancaster.*

Since my last communication I have met with only two cases of anasarca, which I herewith send; and should you deem them worthy of insertion in The Veterinarian, I think it would act as a more powerful incentive to my brother veterinarians giving the spartium scoparium a fair trial, than any language I could or should feel disposed to use, in recommending it to their notice.

Before I proceed to the relation of the cases, I feel bound to digress from my subject, and refer you to the last number of

THE VETERINARIAN, in which you will find that I attributed the pulse becoming wiry to the *camphor* which I had administered.

I perceive that you are rather doubtful as to its either producing that or any other salutary effect; but as I am not at the present moment prepared to enter into any controversy regarding camphor, or its effects, I shall content myself by briefly giving my opinion—an opinion deduced from actual observation, and from the habit of very frequently administering it.

In the first place, I have been in the constant practice of giving it (for the last twelve years) in all cases of chronic cough, with a decided advantage over every other remedy, and, in fact, when every other had failed. It is also my practice to administer camphor after the severity of pneumonic affections has in a great measure subsided; and, in my opinion, in all the cases in which it has been given, great advantage has resulted from its exhibition.

In these last cases I have remarked that the pulse has become wiry, from the effect of camphor; for when I have suspended the use of the camphor for twenty-four hours, I have observed the pulse restored to the state it was in previously to the administration of that drug, and I have likewise produced a wiry pulse in six or eight hours after the exhibition of camphor.

I shall now proceed with the cases to which I have referred.

CASE I.

On the morning of the 14th January last, I was called up to go and see a horse belonging to Mr. W., coal-merchant of this town, which they said had hurt itself during the night, for they found the halter broken, and imagined he must have fallen in some way or other; but upon seeing the animal, I immediately perceived the case to be anasarca. The near hind leg and thigh were much swollen, and very hot, and painful to the touch. I ordered the smith to bleed him in the foot, which was, after great difficulty, accomplished, the parts being so sore and stiff as scarcely to allow the leg being lifted up. I gave ℥ii of the common diuretic mass, and ordered continued fomentations of hot water, mash diet, &c.

15*th.*—Tumefaction increased to a considerable extent, and the sheath seven or eight times its natural size. I gave a quart of a strong decoction of the broom, and ordered the fomentations to be continued.

16*th.*—No alleviation; tumefaction rather increased both in the extremity and sheath, and a slight effusion under the belly. Repeated the decoction, and the fomentations also to be continued.

17*th*.—Found the animal easier, the parts not so sore to the touch; but the effusion under the belly more extensive, and the sheath increased to such a size as to make me fear the integuments would give way. Repeat the decoction, and continue the fomentations.

18*th*.—Animal better, tumefaction in lower part of the leg not so great: repeat the decoction, and continue the use of the fomentations.

19*th*.—Animal much better; tumefaction decreasing; treatment as before.

20*th*.—Tumefaction fast decreasing, and the horse able to move across the stall: continue the same treatment.

21*st*.—The horse able to walk; tumefaction abated; decoction and fomentation as before.

22*d*.—Still better: I had the horse walked out for half an hour, and gave the decoction, and used the fomentation.

23*d*.—Tumefaction considerably decreased in the extremity and sheath: gave the decoction, and used the fomentations.

24*th*.—Extremity free from tumefaction; sheath not much larger than natural, and the effusion under the belly did not exceed six square inches: continue the decoction.

25*th*.—The extremity and sheath free from tumefaction, and the effusion under the belly scarcely perceptible: gave the decoction.

26*th*.—The horse was put to work, and has continued to work every day since without the least relapse.

CASE II.

Jan. 23*d*.—I was desired to see a post-mare, who had, as they termed it, a "shoot of grease." I found the smith bleeding her in the foot to a considerable extent: the leg and thigh on the near side were very much enlarged, and painful to the touch. I ordered fomentations of hot water, and gave a quart of the decoction.

24*th*.—Effusion under the belly; gave the decoction, and used fomentations.

25*th*.—Both hind extremities affected: gave the decoction, and used fomentations.

26*th*.—Mare considerably better: continue the treatment.

27*th*.—Considerably better: treatment as before.

28*th*.—Effusion under the belly disappeared; extremities nearly of their natural size: gave the decoction, and ordered her to be exercised.

29*th*.—Mare free from swelling: had her exercised.

30*th.*—She went to her work, which she has since followed without relapsing.

I had again to remark how quick the decoction was in its operation, as it frequently took effect during the time I was administering it [Does not this appear to argue in favour of absorption by the mesenteric veins?), and without producing any unpleasant consequence. Its effects are diuretic, and tonic; and it is by no means despicable as an anthelmintic. The last mare voided an immense quantity of terites during the time she took it.

ON THE EXTERNAL CAUSES OF DISEASE.

By Mr. W. F. Karkeek.

There be many good and healthful *airs*, that do appear by habitation, and other proofs; that differ not in smell from other *airs*.—Bacon.

Dr. Johnson, alluding to the task of an author, says, "It is either to teach what is unknown, or to recommend known truths by his manner of adorning them;—either to let new light upon the mind, and open new scenes to the prospect, or to vary the dress and situation of common objects, so as to give them fresh grace and more powerful attractions."

It has been before stated that the writer lays little claim to originality; but if in his progress he should describe such scenes to the readers of The Veterinarian, as to tempt them again to return and take a second view of things hastily passed over, his intentions will have achieved their entire consummation; he shall then think his leisure usefully employed—his time fortunately bestowed.

The atmospheric air must be considered in two points of view; viz. in its chemical composition and properties, and in its medicinal relation, as far as it regards the condition of *health* and *disease*. But prior to our entering on this subject, it will be necessary to make a few preliminary remarks on an animal body.

An animal body may be considered as a very complicated machine, made up of various parts, each differently constructed from the rest, and possessed of different feeling and manner of acting. The different parts of this machine are called *organs*, and the whole taken together we call the *system*. Every thing around living bodies tends constantly to their destruction; and to this influence they would yield, were they not gifted with some permanent principle of reaction. This principle is their life; and a living system is constantly engaged in the performance of functions whose object it is to resist death.

It can hardly be requisite to state at the commencement, that the nature of the living principle is among the subjects which are considered to be beyond the reach of human ken. By some, the vital principle is compared to magnetism, to electricity, and to galvanism, or it is roundly stated to be oxygen. "Tis like a camel, or a whale, or like what you please."

Without considering the different hypotheses that have been formed on this subject, for it has proved a very fruitful field for conjecture, we will state the opinions of Bichat on the theory of life. This eloquent and philosophic writer considered it "as a collection of matter, gifted for a time with certain powers of action combined with organs, which are thus enabled to act; and the result is a series of functions, the connected performance of which constitutes a living thing."

This writer has pointed out two remarkable modifications of life, as viewed in different relations: *one* common both to vegetables and animals, the *other* peculiar to animals. The vegetable exists entirely within itself, and for itself, depending upon other substances only for the materials of nutrition. The animal, on the contrary, in addition to the internal life, has another, by which he connects himself with objects about him, maintains relations with them, and is bound to them by the ties of mutual dependence. This afforded a principle upon which to form a distinct classification of the animal functions. Those which animals have in common with vegetables, which are necessary merely to individual bodily existence, are called the *functions of organic life,* because they are common to all organized matter. Those, on the other hand, which are peculiar to animals, and which in them are superadded to the possession of the organic functions, are called the *functions of animal life.*

By this division into organic and animal life, animals have two lives, the concurrence of which enables them to live and move, and have their being—both equally necessary to the relations they maintain as living beings, but not equally necessary to the simple existence of a living thing.

By their animal life they become related to the world about them: their senses convey to them a knowledge of the existence of other things besides themselves; a knowledge also of their qualities and their capacities for producing pleasure and pain; for they feel, they reflect, they judge, they will, and react upon external things by means of the organs of locomotion and voice; and, according to the result of their mental operations, they become capable of communicating and receiving pleasure and pain, happiness and misery. "Animals, when individuals interfere, or associate with one another, ever have some power of expres-

sion. Every dam has a call for her young, and in every flock or herd there are signs that bring numbers together; signs of enjoyment or suffering, of desire or aversion; and even among rivals and enemies there are signs of alarm, of defiance, or rage*." In the congregation of mere animals, it is true that the motives to union on the one hand, or the occasions to strife on the other, are comparatively few, instinctive, and simple: the troops they compose are uniform in their manner; herds merely pasturing together, in the manner of a family, united under a common parent or head, and co-operating in the performance of the same work together. Whilst in human nature the associating principle is combined with a variety of considerations and circumstances which lead mankind to vary their forms indefinitely.

But with respect to *organic life*, there is no difference between man and the brute creation. The organs which are to perform the function of life in both are no sooner created and perfected, than they commence their labour, and are as perfect in the young animal as in the adult. This is the life by which all the parts of the body are kept in repair:—

> "The watchful appetite was given
> Daily with fresh materials to repair
> The unavoidable expense of life,
> The necessary waste of flesh and blood."

Food proper for nutrition is first submitted to the operation of digestion, is then thrown into the circulation, undergoes in the lungs the changes which respiration is intended to produce, and is at length distributed to the organs, to be applied to their nutrition; from thence, after a certain period, it is taken away by absorption, thrown again into the circulation, and finally discharged from the system by means of the several exhalations and secretions.

According, then, to the theory which we have adopted (Bichat's), living systems are endued with certain properties, powers, or principles, the chief of which are those of feeling and moving, by whose possession their organs are rendered capable of performing the functions upon which the continuance of life depends. We must consider, then, life as that state of being produced by the possession and exercise of certain vital properties, and not, as is commonly supposed, to consist in any single principle. Richerand, Hunter, and others, supposed that a vital principle exists, which incessantly watches and guards over the whole machine; a kind of preserving principle that

* Ferguson's Moral Science.

struggles against all the powers that may tend to interrupt its exercise. We confess that we never could discover any such presiding genius, and we acknowledge no other invisible power that watches over animated machines than their *Creator*. The hand of a Divine Artist is every where visible; and he who can look through the range of Nature's works, and not admire,—he who can admire, and not adore,—falls short of what Nature intended him for, and is deficient in the first blessings of an enlightened mind.

> "Search, undismayed, the dark profound,
> Where Nature works in secret; trace the forms
> Of atoms, moving with incessant change
> Their elemental round; behold the seeds
> Of being, and the energy of life,
> Kindling the mass with ever active flame;—
> Then say if naught in these external scenes
> Can move thy wonder?"

If there is any one prevailing substance in the animated machine that deserves the name of vital principle more than another, it is the *blood*. The tenet of the Mosaic philosophy, that "in the *blood* is the *life* thereof," must be allowed its full weight in its literal as well as figurative sense:

> "The fountain whence the spirits flow,
> The generous stream that waters every part,
> And motion, vigour, and warm life conveys
> To every particle that moves or lives."

And whether it deserves the title or not, of this we are certain, that it is *one of the vital properties*.

This brings us immediately to our subject; for we are of opinion, that, in all diseases arising from *aerial poison*, the blood is diseased; and that the diseased action of the solids is as much the effect of the diseased state of the blood, as it is in those cases where we can cause disease by injecting a poisoned fluid immediately into the circulating current.

It has been too much the fashion for nearly a century past, to overlook almost entirely the diseased state of the fluids. Ancient physicians believed that a diseased state of the fluids was the cause of *every disease;* whilst those of the present day, on the contrary, attribute almost all the "ills that poor flesh is heir to" to the solids. In our humble opinion, they were both in error; for the different parts of the body, the fluids as well as the solids, may undergo modifications in a state of disease.

Dum vitant stulti vitia, in contraria currunt.—Hor.

[To be continued.]

CASTRATION IN REFERENCE TO RIGS.

By Mr. W. Percivall.

I believe the notion to be pretty general, not only among horse-dealers, and grooms, and others of that fraternity, but among veterinarians too, that *rigs* do not only retain the sexual appetite, but are even notorious for the display of it: indeed, the very name itself of "rig" appears to have been given them from an impression that they were "lewd and wanton."

> "Other women
> Cloy th' appetites they feed; but she makes hungry,
> Where most she satisfies. For vilest things
> Become themselves in her; that the holy priests
> Bless her, when she is riggish."

I always, myself, consider some degree of respect and consideration due even to "an old woman's saying," but more still to one that is current among men; particularly one that relates in any manner to their own trade or calling: at the same time, I lose much of the respect I entertained for such saying, the very first time a case happens to come before me which does not verify the notions it had inspired me with.

On the 1st of April of the past year, I purchased a chesnut colt, got by one of his late Majesty's blood-stallions, and then only wanting the month to pass in order to complete his third year. Not having been cut, I determined on operating without delay, he being at the time in low condition. As soon as he had been cast and properly secured, and I came to examine his scrotum, I found that he had but *one* testicle down. With the impression of the wanton and plaguy rig full on my mind, I felt a degree of disappointment at the circumstance. I blamed myself for not having taken the precaution to examine him at the time of purchase. However, I proceeded with my operation. I laid bare the testicle by making an incision with a scalpel correspondent to its long axis, and sufficiently extensive to admit of the escape of the gland; and then I secured a pair of the ordinary fluted wooden clams upon the chord (unprovided with any caustic) in such manner as to suppress as effectually as possible all subsequent circulation; after which, at the time, I excised the testicle, together with the epididymis; leaving the *globus major* only attached, which acted as a sort of stay to the clams.

Next day, perceiving so much tumefaction of the lips of the scrotal wound, that the clams, which were drawn up forcibly

against it by the retraction of the chord, were embedded, and in part concealed by them, I determined on removing the clams at once, and thereby remove the apparent cause of the swelling, as well as set the chord at liberty, or, at least, relieve it from its state of tension. In doing this, I first abscised the parts of the chord projecting beyond the clams (unwittingly, as it afterwards proved), for, no sooner were the clams taken off, than from one place the blood issued in a fine stream; from two others, in droppings. Let this be a caution to others, who may choose to remove the clams after the lapse of twenty-four instead of forty-eight hours, not to cut away any parts; but simply to cut the strings connecting the clams, and with a gentle, cautious hand, dilate them, and slip them off, disturbing, while so doing, as little as possible, the end of the chord. However, the hæmorrhage turned out of no sort of consequence, for, in an hour afterwards, it had entirely ceased. The tumefaction is confined to the *near* side of the scrotum—the same that contained the testicle.

Second day after the operation.—Scrotum swollen more, and so projecting on one side as to receive an impression in it from the prominence inside the near thigh. No discharge apparent from the wound. Sumat statim mass. purgant. ʒiv, and be walked out for an hour.

Third day.—Scrotal tumour increased. Prepuce also filled. Purulent issue from the wound, mingled with drops of serous fluid. The purge operates briskly. His appetite has been and continues quite good. Proves testy on having the swelling touched or pressed with the finger. Walked out for an hour morning and afternoon.

Fourth day.—The tumefaction has left the scrotum for the prepuce, into the lowermost parts of which it has sunk, and made a sort of pendulous bag of it, of considerable bulk—so much so, that there appears reason to apprehend lest he might be unable to protrude the penis to stale. A white laudable pus comes freely from the wound. Still purges. Walked out twice aday.

Fifth day.—Tumefaction diminished. Wound freely discharging.

Sixth day.—Tumefaction decreasing. Discharge continuing. Appetite unimpaired. Exercise continued.

Seventh day.—Every thing continues to go on well. The parts are now freely fomented every day.

Tenth day.—The swelling has entirely disappeared. Discharge, but abated in quantity, continues.

Thirteenth day. -Turned out to grass, *well.*

The colt had been at grass but a few days, when the proprietor of the pasture came to me, and complained that I had turned a stallion among his mares; and that there were such mischievous and dangerous gambols going on among them, that he was fearful for the consequences. I lost no time in going to the field myself; and finding matters as he had represented them, I resolved on having my colt fetched up into the stable. I delayed, however, doing so until the following day; and the result was, that my colt had during the night been so violently assaulted with the hind legs of the mares upon his breast, that his pectoral muscles, from tumefaction, could hardly perform the office of progression in the difficult walk he had (about a mile) from the pasture to the stable.

On his arrival home I had to bleed, and physic, and foment him, to abate and disperse all the contusion and consequent tumefaction in his breast and fore limbs. Being well once more, I determined on running no further risk, and accordingly turned him into a grass paddock by himself.

Four months from the date of performing the operation, I took him into the stable with other horses—a double-stalled stable, containing a gelding in the next stall to him, and three mares in the stalls opposite—in which he has stood ever since with all the quietude of the gelding himself; and besides that, has been lunged and used every day, indiscriminately with mares and geldings, without evincing (hitherto) any of his former amorous propensities. He has not yet attained *high* condition—having been, from time to time, ailing from catarrh, fever, &c.: whether any stallion-like desires will be engendered by that state, remains, perhaps, yet to be proved. I do not myself, however, apprehend any such return; although it is contrary to old and general notions, and even to the opinions of several well informed and experienced veterinarians, with whom I have held converse on the subject.

P.S. Will the other testicle ever make its appearance?

February 16th, 1833.

To the Editors of "The Veterinarian."

Gentlemen,

Having been a reader of The Veterinarian from the first, and thinking that it is high time for me to make some return for the information I have derived from it, I send you the following cases of practice; and though they may not be either new or extraordinary with other practitioners, I beg that you will receive them as an earnest of my good will and intentions, and am your obedient servant,

A Veterinary Surgeon.

CASE I.

Cerebral and Abdominal Disease.

May 27th, 1830.—I was called in to a two year-old half-bred gelding, that was found on the same morning with his head in the hedge of a clover field, where he had been for some time. I was informed that he had never been amiss before, and had been worked upon the farm for some time before he was turned out to clover. At 2 P.M. I found him leaning against the manger, with his head resting upon some grass in it, and all four legs very near together. Pulse 70, somewhat corded, but by no means small. He had become quite warm since he was brought in. On raising his head he fell down. I took away ten lbs. of blood from the jugular, and gave with difficulty seven drachms of Barb. aloes in solution, and directed that he should be bled in the evening to half the above quantity, and that two doses of medicine, containing aloes, liq. ammon. carb., and tinct. zingib., should be given. He moved round the stable several times in the course of the evening, with his near side to the wall.

28th. 10 A.M.—Moves much better, but looks heavy; grates his teeth, and moves his eyes about in a very odd manner. He appears to be quite blind, and walks against the wall. He drank some quantity of water, and will take grass, but does it at random, and swallows little or none. I took away four lbs. of blood, and gave the same quantity of medicine at once that was given at twice yesterday evening: inserted setons over the brain, and directed that his head should be kept wet with cold water.

Evening.—Is not so well; continues to be very costive: I therefore gave ℥ss aloes in solution, and directed that he should be clystered.

29th. 10 A.M.—Stands and walks better, but drags his near hind leg after him: pulse 60, and regular; grates his teeth, anxious for food, and drinks freely: the dung raked from him is covered with mucus: his loins are raised; I had them covered with sheep-skin; I bled him to six lbs.: on raising his head, he fell down. I gave ℥ss of aloes, continued the clysters and the water to the head. About 1 A.M. he again fell down, and could not be raised.

30th.—I heard in the morning that his neck was become stiff, and drawn backward; I sent blistering liniment for his neck and spine. I saw him at 5 P.M. down on the near side. The pulse is become irregular, and I cannot count it. He strains when raked: there is general tremor, and constant rotatory motion of the off eye: he takes water freely from a horn. I opened the

temporal artery, and continued cold water. He died about seven o'clock. He had, from the first, appeared worse every twelfth hour, at noon and at midnight: he was seen to look back to his flank once, and had not appeared sick, or at all affected by medicine.

On opening him, I found the vessels of the brain turgid. There were several small brown spots upon the substance of the brain, under which were small quantities of pus. The lungs appeared healthy, but, as it was getting dark, they were not cut into, and the heart was forgotten, and not examined. The liver was enlarged, of a dark green colour, and attached to the stomach by a hard and large substance, on cutting into which several abscesses were found. The stomach contained some liquid, and appeared to have recently taken on inflammation; the spleen, in part, thickened, and in that part containing pus, as it were, in cells; while other cells were distended with grumous blood. The mesentery was of a brown colour, thickened and contracted, drawing and attaching the bowels together in a strange manner; the small ones in parts contracted, and in others forming pouches; the large ones containing a good deal of excrement, but on no part of the bowels was there any trace of recent inflammation. This case I at first supposed to be stomach-staggers, and treated it in a way according with my ideas of that disease, though after the first day I was by no means satisfied. I do not like to see any one sounding his own trumpet in a work devoted to science; at the same time I feel disinclined to record misconception of disease, ignorance of the proper mode of treatment, or ill success: but in the above account it will be seen that no treatment could have succeeded; and though it may be difficult to account for the symptoms and difference of symptoms shewn in this and my other case, it proves how much disease may come on without being noticed, how careful we ought to be in our prognosis, and how absurd is the idea of pronouncing a horse sound, because we cannot discover any disease.

CASE II.

Termination of Strangles in Affection of the Brain and Spinal Chord.

1830. *June* 10*th*.—I was called in to a half-bred four year-old gelding, that had been attacked by strangles a month before, and had been treated for it by a neighbouring farrier. I was informed that there had been much discharge from the nostrils; that the glands had been enlarged, but that suppuration did not take place (some ointment having been applied); that his

breathing had been very quick a fortnight before I saw him; but that he had appeared so much better since, as to have been turned out some part of the time: that for the last three or four days he had not been so well, had not laid down, and his legs had been a little swollen; nevertheless, he appeared lively, and was even ridden for exercise the day before, when he was observed to lean to one side of the road.

On my arrival, I found a boy leading the horse about the yard. I had him taken into a large open stable, and on examination found that he was blind on the off side, with dilated pupil, but which contracted on being brought to the light. The pulse was 60, regular, and tolerably full, but with a feeling which I cannot pretend to describe. His breathing was little if at all affected, considering that he was just brought in from exercise: he moved his fore legs stiffly, sidled to the manger, and leaned with his off side against it. He had eaten very little to-day, and had been observed to look back once to the near side of his chest.

Supposing that his brain and lungs were affected, I bled him to the extent of four quarts, and inserted setons over his brain and on each side of the chest. In doing this, I observed that he was particularly sensitive on the near side of his head and chest, but did not appear to feel at all on the off side of either. I also applied blistering ointment round about the setons in his chest; and to give him every chance afforded by such means, I inserted an extensive rowel underneath, gave him laxative medicine, and had him warmly clothed.

11*th*, 1 P.M.—Pulse 50, and regular; breathing natural: setons on near side beginning to discharge matter; those on the off, yield a little blood on pressure. The blistering ointment had produced some swelling on each side, but no discharge. I was informed that he had been violent the evening before, looking wildly round, pressing against the wall, and striking out with his near hind leg, and which came on again this morning (twelve hours after the first time), when he was bled to the extent of three quarts. He had drunk some water, and now and then eaten a few mouthfuls very voraciously. I dressed the setons, and gave another dose of laxative and diuretic medicine, and ordered cold water to be applied to the head, if the symptoms above-mentioned returned.

12*th*.—He had been violent again this morning, and on the application of cold water he fell down. The setons on the near side discharge well; those on the off are quite dry; those on the head discharge very offensive bloody matter. The bowels are relaxed, and there is much mucus discharged with the fæces.

13*th*.—Has continued down on the off side, at times violent, and striking out the near hind leg: setons in head and near side discharge well. Died about 10 A.M.

I saw him opened next morning: the left lung was very large, hard, of a somewhat grey colour, or approaching to brown, and containing many small abscesses; the right lung was quite black, as were also the auricles of the heart, while the muscular substance was very pale. The liver and spleen were much diseased; the brain discoloured by turgid veins, particularly the left side, at the anterior and inferior part of which there was a brown spot, under which was about one oz. of healthy-looking pus; and about the same part of the right side was a small spot, and a small quantity of pus.

The above case, detailed, as well as I am able, from the short notes taken at the time, is one of the very many forms in which I have seen strangles terminate; but as you and your readers will make remarks for yourselves, I shall only observe, that it was a very interesting case to me, from its shewing how serious an affection of the brain could come on, and exist for some days without being fatal; and how that affection influenced or restrained the action of the heart and respiratory organs; that it destroyed the feeling and power of the vessels to secrete matter on the opposite side of the body, making it appear that the nerves of feeling are derived from the brain, and from the opposite side to that to which they are distributed. In conclusion, I would call your attention to the return of the paroxysm every twelve hours, and the striking out with the hind leg in the one case, and the inability to move it forward in the other.

Had not the writing of the "Veterinary Surgeon" been recognized, and that with compunctious visitings, by the individual whose initial is appended, these cases containing, and the second of them particularly, much instructive matter, would not have been admitted; for we must have no anonymous correspondents on any subject. Of the letter, dated many a month ago, the said individual will only say, that it ought to have been replied to, and that he begs pardon. Portions of the letter received a few days back, and which were truly of public concern, had been sent to the printer before this came to hand. As a public or "private correspondent," Mr. ——'s communications will always be welcome; although we do not quite coincide with our friend's physiology, and most certainly not with his account of the origins of the sensitive nerves.—Y.

A CASE OF UMBILICAL FISTULA.

Communicated by Mr. Dick.

In the month of June, 1831, I received a letter from Mr. T. Thomson, V.S. Redstone, Perthshire, an old pupil, communicating an account of a case of artificial anus in a horse which he then had under his care. The case is so rare, if not quite unique, that I regret having delayed so long forwarding it to you; but by some mischance it has been mislaid until now. I give it in his language:—

"The horse, a fine four-year old, was bought by Mr. Donaldson, Grasewell, Carse of Gowrie, in the Kinross market, last spring. He had at that time a considerable enlargement at the umbilicus, but did his work for some time very well; and in the beginning of April he was seized with a "ting," as the foreman called it; but had been observed stiff, and unwilling to go to work from the time he was bought. The farrier was sent for, and treated him according to his ability; and the horse got better. He was in two or three days again put to work; but the driver observed him to be still very stiff, and unwilling to work. He shewed no other symptoms of pain, so far as the farrier's observations extended. In a short time after this, an opening formed at the navel, by which the whole of the fæces were passed off. The farrier was sent for, who stated he had never seen or heard of any thing of the kind; but advised that the horse should labour as usual, in order to work it off, which was otherwise likely to work his bowels out. I was then sent for. I stitched up the opening, which was large enough to admit a person's fist, and applied a roller with a pad of tow over it, also occasionally adhesive plaister. Adhesion took place, and granulations formed very rapidly for some time; but a very small opening remained, which seemed extremely obstinate, yet was making a little progress, and to all appearance would have been entirely closed in a short time. Without any alteration of symptoms, however, he died; and, on examination, I found his intestines in many places perforated by ulceration, apparently the effects of lumbrici. There seemed to be no disease about the umbilical opening, except adhesion between the intestines and the parietes of the abdomen. I found it to be a part of the ileum that had fallen into the opening, about a foot from the cœcum. Nature had formed a tube of about two inches long, quite distinct from the ileum, by way of a rectum; but when it was a good deal healed up, air seemed to be sucked in by it, and passed off per anum. In drinking, the water passed off by it without any of the ali-

ment being mixed with it: it seemed almost as clean when passed, as when drunk. If he got the benefit of his meat, he received no benefit of his drink, for it passed off as fast as he drank it; and from this cause, apparently, he became very much emaciated. During the time he was with me he shewed no symptoms of disease, but a slight attack of gripes, which only lasted for about an hour: this was about a month before he died. Prior to death, the wound was as small as a quill: there was a great quantity of a whitish mucus discharged from the opening, but the fæces were discharged by the natural passage. He was allowed only two pints of water a-day, with some pea-meal, unless when, for sake of experiment, he was given a larger quantity. He has been kept on a meal diet, principally; and the larger proportion pea-meal, with a small allowance of hay."

When Mr. T. first saw the horse, he says he gave a clyster of water-gruel, which gave a great deal of inconvenience, seemingly, by emptying the posterior intestines too much, as flatus passed, seemingly, from the orifice to the anus, and he worked like a pair of bellows for four hours. He then injected a solution of sulph. zinc. at the orifice, which caused griping pains for a short time; but they did not recur again, although this was afterwards frequently repeated.

FATAL AFFECTION OF THE BOWELS IN HORSES, RESEMBLING CHOLERA.

By Mr. Dick.

Cases of Mr. M'Turk's Horses, near Moffat.

From the end of November, 1831, until the end of March following, Mr. M'Turk lost seven farm horses out of eight by a disease, of which the following are the symptoms:—

The first had been doing little work for two days prior to his death, but was employed for an hour before being seized in leading corn from the stack, which was light work, the day being mild; and he had been on the same feeding for two months, and which consisted of hay and oat straw, but more especially the latter as fodder, and two feeds of old oats per day.

He was suddenly attacked with purging; after being put into the stable, and having got his water, symptoms of cholic came on; also a rigor, which continued until death, the pains increasing as the disease advanced; the mouth, tongue, legs, and ears, were very cold; with great difficulty of breathing, and with heavy heaving of the flanks. The veins of the legs appeared full of blood; but such was the state of it, that if the veins were pressed

upon by the fingers, the impression was left, and there was no elasticity in the vessels.

The blood when drawn was thick, would scarcely flow, and "as black as could be." There was a death-like appearance in his countenance; the eyes sunk and ghastly: and he died in about four hours after he was taken ill. He was not particularly examined after death.

In two or three weeks after the first, a second was attacked: the symptoms were precisely similar; but he bled freely at first, when four or five quarts were drawn; but in an hour afterwards it was like the other; it dropped away, and resembled treacle in thickness: he died in three hours. He had been at work all day in the plough, and was playing when coming to the stable, about two P. M.; at eight P. M. his supper was given to him, but he was not inclined to eat; he was observed, before leaving the stable, to be attacked similar to the others, purging, &c.; and he was dead by eleven P. M. On examining him the next day, the only morbid appearance recognizable was at one place, and that was the slightest possible blush upon the intestines, such as severe cholic might ultimately have produced. "The immediate cause," says the person who examined it, "of this case I should suspect to have been the reception of something cold into the stomach and bowels while the animal was over-heated, or otherwise predisposed to disease." In a week afterwards, a third one became affected, under the same circumstances, having, however, only worked in the forenoon. Within a fortnight another died from similar causes, and under the same treatment. These three patients were between three and four hours ill.

In two months afterwards, two horses in one day were seized; one had not been out: he was ill five or six hours, and did not lie down. On inspection after death, a degree of inflammation of the pleura could be observed. The other was at work in the fore part of the day. In three weeks or a month another, in like manner, was carried off. About a week previous to this last case, all the horses were put through physic, and the stable cleansed and fumigated: with the exception of the first, all had had a feed of steamed potatoes a-day, about half a pailful, and they were in fair condition.

The contents of their stomachs were in a natural state, but those of the intestines were quite fluid throughout, and rather of a whitish slimy appearance.

THE VETERINARIAN, MARCH 1, 1833.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

In our number for January, we briefly requested that some of our country readers would favour us with the result of their experience and observation, and the bearing of particular circumstances of temperature, moisture, soil, or food on the health or disease of domesticated animals. We now reiterate the request, and earnestly desire this small boon from our numerous readers.

In pursuit of the stern path of duty—impelled only by an earnest desire to elicit the truth, and animated by a resolute determination to record it, we may well invite,—nay, stepping a little out of our ordinary sphere, we demand—the assistance of our brethren in this important labour.

We do not require from any individual a general history of endemic complaints, but simply an account of those *diseases* which are considered to be prevalent and peculiar, and likewise those that are not prevailing in his immediate neighbourhood.

The causes of diseases are various—often obscure, and sometimes totally unknown. In order, then, to extricate ourselves from the almost countless difficulties with which we are surrounded, it is indispensably necessary that their proximate causes should be closely traced, and accurately defined.

By this method we shall obtain a number of facts, from which we may safely draw our conclusions, and be able to unravel the mysteries of many diseases that are now considered beyond our ken.

By a strict attention to the course of nature, natural philosophy discovered many of her laws, and has very happily applied them to account for many phenomena which before were very ill understood. The whole object of philosophy, as Newton expressly teaches, is reducible to these two heads: "first, by just induction from experiment and observation, to discover the laws of nature; and then to apply those laws to the solution of the phenomena of nature."

As long as philosophy was built not upon its substantial basis

of actual experiment, but imagined properties, which were assumed as data, it was putting on new forms almost every day; for one fanciful opinion had always a right to supplant another. Lord Chancellor Bacon was the first who discovered the fallacy of this doctrine; he rejected all that chimerical nonsense which had so long usurped the name of philosophy, and wisely exclaimed, "Non fingendum, aut excogitandum, quid natura fuit et faciat, sed inveniendum est," that the operations of nature were not to be fancied, but diligently scrutinized.

If we for a moment direct our attention to the solid parts of Great Britain, we perceive infinite variety branching out of unity of plan. We see chains of mountains, most of them almost barren, and affording a dreary abode to a few children of necessity; we see corresponding vallies, where nature pours out her abundance, and man and all animated beings serenely enjoying the blessings of Providence—extensive plains, where harmless flocks enjoy a placid and sportive existence—barren hills, thick woods, and deep marshes, with rivers and lakes interspersed, where various orders of organized beings fulfil the purpose of creation, and "hymn their equal God."

The temperature of the country is almost as diversified as the soil; and both combined produces a diversity in the forms and constitutions of animals of the same species.

These obvious varieties lead us to look for some modifications in the *morbid phenomena;* for the diseases of animals are modified by the same immutable and unerring laws that tend to produce the great diversity in their appearance.

> "Continuo has leges, æternaque fœdera certis
> Imposuit natura locis, quo tempore primum."

Let us study, then, those laws; let us understand their peculiar action on animal bodies, both in a state of health as well as disease; for without this it is utterly impossible to develope all the nice intricacies of the healing art, or successfully to dispense its numerous blessings.

It was from a strict and perpetual reference to the established operations of nature that the old mummery of medicine, with all its cabalistic and unintelligible mysticism, has given place

to direct tangible, demonstrable truths, as simple, as plain, as interesting as the palpable principles of all other departments of natural philosophy. The study of nature principally distinguishes the scientific veterinary surgeon from the barbarous and ignorant empiric,

> "Whose souls proud science never taught to stray
> Far as the solar walk or milky way."

It enables us to detect the crude notions which shallow pretenders have mistaken for principle, and to unravel the ingenious web in which sophistry sometimes contrives to envelope the plain conclusions of common sense. It teaches us to beware of the bright labyrinth through which hypotheses, when aided by eloquence, might lead us; for it is easy to theorize, and, unfortunately, there are too many who do so plausibly; like many a plant, which, under the fairest guise of colour and form, sometimes contains within its fibres the deadliest poison, as in the scorching plains of the east, where the Upas tree extends an alluring shade over the exhausted and unconscious traveller, who is soon to sink beneath its deadly atmosphere.

Do not let us talk ourselves into the chimerical belief that we are perfect. Let us not deceive ourselves; ours is a profession which cannot be too assiduously cultivated, and perhaps the greatest pleasure its followers derive, is owing to the great variety and never-failing springs of knowledge which it presents: there is little to fear of those springs becoming dry, for to none, with more truth, than to the veterinary profession, can we apply the old saying,

> "Multi multa sciunt, sed nemo omnia."

K.

GLANDERS IN THE HUMAN BEING.

A MAN, aged twenty-three, was admitted into St. Thomas's Hospital, with no other complaint than general indisposition and debility. A few days afterwards profuse diarrhœa supervened; and when this was, with some difficulty, arrested, he began to

complain of much pain in the head, and became delirious, to mitigate which leeches were applied to the forehead: he then spoke of wandering and acute pains every where, indicating some rheumatic affection; and a tumour appeared on one of the metacarpals, and another on one of the metatarsals, seemingly of a gangrenous nature. The pain in the head would again return, attended by delirium, so that he was compelled to be strapped on his bed; and, all the while, his flesh was wasting and his strength diminishing, and, in fact, he was evidently sinking.

Five days, however, before his death, the site of the leech-bites assumed a purple, puffy appearance—the approach of sloughing was indicated; and similar soft tumours appeared on the back part of the head, and rapidly increased until the posterior part of the head assumed a strangely swollen and unnatural appearance; at the same time some scattered large globular pustules began to arise on the neck, and there was occasional discharge from the right nostril, which was thin, yet somewhat adhesive; of a yellowish brown colour, and exceedingly offensive. A smaller discharge, but not so frequent, appeared also from the left nostril. The man now began to rally a little, and could be induced to enter into a somewhat unconnected conversation.

The tumours increased in number and size, but were still promiscuously scattered, and many of them were seen on the arms; and on some parts of the arms and more of the legs, there were, on the course of the principal lymphatics, slight elevations of the integument, which, on pressure, seemed to indicate the presence of a fluid; and some of which began to assume a red and even purple hue.

The resemblance between these new appearances and two cases of supposed inoculation with the matter of glanders, which had occurred in this Hospital in 1829, under Dr. Elliotson and Dr. Roots, struck Mr. Stone, the assistant apothecary of the Hospital, and, the former gentleman happening to be in the Hospital, and the physician by whom the patient had been admitted not having to attend again until two days had passed, Mr. Stone requested him to see the man. Dr. Elliotson immediately confirmed Mr. Stone's diagnosis; and, on questioning the poor fellow,

it was ascertained that he had had a glandered horse under his care a month before, and that the discharge from the nose had often come upon his hands. The case was now sufficiently plain; but the patient was too far gone to admit of the slightest hope of cure, and the attention of the medical attendants was confined to the mitigation of the severest symptoms, and particularly an insatiable thirst with which the sufferer was tormented. Dr. Elliotson had the kindness to inform us of the case, thinking that the inspection of it would be interesting to veterinary practitioners.

On Saturday, the 16th, we saw him: the appearances were as above described, except that the puffy tumours were assuming a more gangrenous character; the pustules were more numerous on the face and neck, but not running in any decided direction, and one of them on the neck was as large as a horse-bean. The discharge from the right nostril was more profuse; there was occasional discharge from the left one, and from both it was insufferably fœtid. His eyes were closed, with considerable œdema of the lids. On the arms and legs were numerous smaller pustules, which dried up and scaled off; but there were on both a few elevated spots, evidently in a line, and following the course of a lymphatic; some possessing no discolouration, others of a dark leaden hue, and of various degrees of hardness, and some then giving the perfect indication of fluid somewhat deeply seated. On one of the ancles, and on the back of the left hand, were more decided puffy swellings, acquiring rapidly a purple tinge. The general emaciation and debility were extreme. The thirst was dreadful. The poor fellow was continually crying out "Water! Water!!" and when the sister fed him with toast and water from a spoon, he would cry impatiently, "That's no use! give me half a pint of water—bring a pail of water—throw a pail of water over me."

We obtained permission to open one of the pustules for the purpose of inoculating an ass with the matter, and another was opened for the use of the medical officers of the hospital: then drawing the poor fellow into interrupted and not always intelligible conversation on his own subject, he again confessed that

there had been a glandered horse in the stables in which he was a helper, and that had been long kept by itself—that he was accustomed to groom it—that it might be six or seven weeks ago when he first began to attend to it—and that for a fortnight or three weeks, or more, before he was admitted into the hospital, he had not been able to attend as usual to his work, and did not know what was the matter with him.

A wound which had been upon the back of his right hand at that time was perfectly healed: there was no redness or inflammation about it, nor could any corded absorbent be traced from it.

About two o'clock on the following morning he died; but some time before that he rallied, and gave an interesting illustration of the ruling passion strong in death: "I am dying," said he; "I shall die soon, but I shall die happy—I know now I am glandered—I shall die as my horses do—I shall die quite happy."

A post-mortem examination took place on the noon of the following day, at which we were also permitted to be present. The pustules or bullæ about the face and neck had all subsided. The puffy tumours on the forehead and back part of the head were gorged with a yellowish semi-transparent glairy fluid, giving to the whole a kind of gelatinous appearance when cut into, yet with scattered minute abscesses. There was neither offensive smell, nor decided gangrene. The pericranium was sound, and on dissecting to it, it was thought by some that there were minute granulated tuberculous substances on it, but they appeared to us to be only portions of this gelatinous substance left in the dissection.

On raising the scull-cap, the frontal sinuses were exposed, and in one of them was a very small congeries or bunch of tubercles, or rather vesicles, hanging loosely in the cavity.

There was no ulceration, or inflammation, or collection of pus, or any other fluid in the sinuses connected with the naval cavity; but on the right side of the septum there was considerable injection, and two minute ulcers, with the preparatory vesicle of a third, and in a line, and following the course of the principal vein of the septum. The edges were decidedly elevated, and seemingly everted, and bore, on a small scale, no indistinct resemblance to the glanderous chancre of the horse.

The most important lesion, however, was found at the base of the larynx, where was a veritable glanderous chancre, with perfect elevated, abrupt, and everted edges; but its central depression was not so great as is usually seen in the horse. Near this was also a preparatory vesicle.

The lining membrane of the trachea was slightly inflamed, the bronchi more so, and puriform fluid might be squeezed out of many of the bronchial ramifications; but there was neither vomica nor tubercle. The other viscera were comparatively healthy, except that in the lower portion of the colon there were many enlarged glands, and even the membrane seemed abraded, an appearance which accounted for the diarrhœa.

On the whole, the examination was satisfactory—the characteristics of glanders were sufficiently developed, but modified by the difference of the subject.

The possibility of the communication of glanders from the quadruped to the human being has long been suspected, or rather painfully known by the veterinarian; but to Mr. Brown, the Surgeon of the 2d Regiment of Dragoons, we are indebted for the first recognition of the disease among medical men. He published in the *Medical Gazette* for July 4, 1829, the history of a case which had occurred in his regiment, and entitled it "Fatal Case of Acute Glanders in the Human Subject." A case had been admitted into St. Thomas's Hospital, under Dr. Roots, in March, and another under Dr. Elliotson, in June, in the same year. These gentlemen were satisfied that their patients fell victims to some morbid poison, and "a poison furnished by a living system under the same disease;" but the nature and source of this poison they could not discover; they could not even guess at them: for they were unable to elicit from their patients any thing satisfactorily to guide them. When, however, Mr. Brown's case appeared in July, Dr. Elliotson (in an interesting account of these cases, and also a valuable epitome of all that has been reported by British and foreign authors, published by him in the 16th volume of the *Medico Chirurgical Transactions*), very honourably acknowledges, "It instantly flashed upon my mind, that this must be what I sought." We shall take an early occasion of referring to Dr. Elliotson's paper, and

returning the thanks of our brethren to the talented professor for the light which he has thrown on a subject that comes home to our business and bosoms; and in the meantime we beg leave to return our warmest acknowledgments to Drs. Elliotson, Roots, and Williams (the man was the patient of the latter of these gentlemen), and also to Mr. Stone, for the facilities they so kindly afforded us at the bed-side of the sufferer, and at the post-mortem examination. Truly grateful should we be for any opportunity to observe how others of these diseases, common to the biped and the quadruped, and particularly rabies, are modified by the different structure and functions and character of the two. Information here should be the common stock of the human and the veterinary surgeon; and we exult that, in this respect at least, we are beginning to outlive the undeserved degradation of our profession.

We are sorry to say that the experiment on the ass was, in some degree, a failure. When we reached home, we were grieved to find that one of our pupils, ignorant of the purpose to which the animal was devoted, and thinking that it was intended merely for dissection, had been taking a lesson in bleeding on the poor beast. We did not see any thing, however, in this which would vitiate the experiment, and inoculated the donkey on the ala of the nostril, on either side; and, taking out the pin, we cleansed the glasses between which the matter had been preserved on the edge of the wound in the neck.

On the second day tumefaction commenced about the wound,—on the third day it was evident that there was considerable phlebitis; there was, however, no appearance of immediate danger, but on the fourth morning the ass was found dead.

Our young friend had not hit the vein at first: there was a deep and almost lacerated wound of the subjacent muscle; effusion into the neighbouring cellular texture had ensued—inflammation was established—aggravated, perhaps, by the application of the poison to the edges of the wound,—the inflammation spread rapidly *downward*—it reached the heart, and the animal died. There was no other apparent cause of death. The scarifications on the nostril were not in the slightest degree inflamed.

With the exception of the heart, and some enlargement of the mesenteric glands generally, there was no thoracic or abdominal disease. The frontal sinuses exhibited no mark of disease. The schneiderian membrane covering the æthmoid and turbinated bones was considerably injected; the membrane of the septum presented a splendid radiated injection; the mucous membrane was elevated in two or three little patches, and there were two distinct but minute ulcers, the edges of which were still nearly pellucid but abrupt, and above them were two little vesicles, and all these were in a line following one of the venous radiations. On the whole, however, although the ass died in consequence of the inflamed vein, we think we are warranted in affirming that another disease had been set up, and that glanders, which had been communicated from the horse to the human being, had been carried back from the human being to the quadruped.

Y.

Veterinary Jurisprudence.

The first two papers came in the ordinary routine of consultation by letter. We shall occasionally insert a few of these things. They will, at least, afford "materials for thinking" for our young friends.

The third is the report of a trial which occurred yesterday, and which we insert, although we disarrange the press in order to do so.

DEATH FROM VENESECTION.

Dear Sir,

I wish your advice regarding a case which happened to me a few weeks ago.

Being sent for to see a young mare that was not feeding very well, and looking rather unhealthy, I took some blood from her: this was about ten o'clock in the morning, and at eight at night there was not any swelling on the part where she was bled. On the next morning, about seven o'clock, a man came to say, that the mare was very much swelled about the neck and head. I went and saw the mare, and found a considerable swelling on each side of the upper part of the windpipe. I applied warm water to the tumour, thinking that I had grazed her throat in giving her a ball; but it turned out that it was blood extravasated in the cellular substance, between the vein and the skin.

The mare, in this state, lived until Friday night, the bleeding having taken place on the Sunday.

The owner of the mare thinks that I am liable for the price of her; or wishes me to leave it to two men of respectability, mutually chosen, to decide the case.

I wish your opinion with regard to my liability for the price of the mare, which I bled as I have done many others; and there was a son of an extensive farmer, who held the mare while I bled her. The owner says that the vein was cut through; but I shewed it to him, and that was not the case.

Dec. 4th, 1832.

CONTRACTION.

1st.—Is the proprietor of a young horse, which has never done work, entitled to warrant that horse sound, although at the time of sale he has a contracted foot, which has existed from birth, and running thrushes, which, however, have never occasioned lameness?

2d.—If a purchaser buys such a horse, aware of the contraction in the foot and the thrushes (which are also admitted by the seller), and the horse becomes lame, from contraction, about six weeks after the sale (the best attention having been given in the meantime to the general management of the animal, and to the feet in particular), is he entitled to return the horse upon the seller, on the ground that a general warranty of soundness was given at the time of sale? Is the purchaser, in fact, entitled to take the general warranty of soundness at the time of sale as his protection, for a reasonable time, from lameness from contraction and thrush?

Dec. 1, 1832.

WHAT ARE EYES GOOD FOR?

HATTON *v.* BOONER. *Feb.* 22, 1833. *Court of Exchequer, London.*

THIS was an action to recover the balance of a bill of exchange of £30.

It was stated by plaintiff's counsel, that the plaintiff is a respectable butcher, and that he purchased from the defendant a mare, for his private use. The purchase was made on a Thursday, and the mare was sent home on the subsequent Friday; and she remained in plaintiff's stable until Sunday, when he rode her out to pay a visit to a Mr. Tipper, a friend of his, who resided not more than two miles from town. When that gentleman saw her, he observed to the plaintiff that she was lame. On the subsequent Tuesday he drove her out in a gig, and she had not proceeded more than thirty yards, when she was unable to move a

foot. On the next day he sent her to the Veterinary College, and Mr. Sewell gave a certificate of her lameness, which was in the fetlock. Several witnesses deposed to her lameness. The defendant refusing to take her back, she was sold at Dixon's, and the plaintiff now sued for the balance.

Mr. Sewell stated, that he had examined the mare, and that she was afflicted with an ossification of the fetlock, to which rest or quiet would give a temporary absence. He also gave a certificate in proof of her unsoundness.

For the defendant, Mr. Serjeant Coleridge said, that when his client refused to take the mare back, she was sold to a Mr. Taylor, and was so far from being lame, that she had been hunted several times, and after one particularly hard day's running, did not exhibit the slightest appearance of lameness.

Four veterinary surgeons, viz. Messrs. James and Charles Turner, Mr. Mavor, and Mr. Howard, were called, who stated, that nothing was the matter with the fetlock, and that the mare was perfectly sound; and this was corroborated by several other witnesses, who were connoisseurs in horse-flesh.

Such was the contradictory evidence, that, at the suggestion of Lord Lyndhurst, the professional witnesses on both sides went again to examine the mare, which was in attendance in the court-yard.

Messrs. Sewell, Mavor, and Turner retired for this purpose; and, on their return, Mr. Sewell affirmed that "the fetlock joint was still enlarged." Mr. Turner said, that "in his opinion, the fetlock joint was not enlarged;" and Mr. Mavor declared, that "there was no enlargement at all." Each supported his previous testimony with so much warmth (tantæne animis equestribus iræ?) as to cause great laughter in the court, so much so, that his lordship observed, that horse-doctors appeared to be as tenacious of their professional opinions as human doctors were.

Lord Lyndhurst left the case to the jury. There being so much contradictory evidence, it was for them to judge of the comparative credibility; and that, as the defendant had not called Taylor, as he was bound to do, they must get out of the business as well as they could.

The jury found a verdict for the plaintiff for the amount claimed.

We will try to learn a little more about this modern battle of the centaurs. Our veterinary friends would do us a great favour by giving us notice of these trials, that we might obtain a faithful report of them. The interest of our art requires it.—Edit.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

On the Influence of Physical Agents on Life, *by* W. F. Edwards, M.D. F.R.S., &c. Translated from the French *by Dr.* Hodgkin *and Dr.* Fisher. *To which are added, in the* Appendix, *Some Observations on Electricity, by Dr. Edwards, M. Pouillet, and Luke Howard, F.R.S.;* On Absorption and the Uses of the Spleen, *by Dr. Hodgkin; On the Microscopic Characters of the Animal Tissues and Fluids, by J. J. Lister, F.R.S., and Dr. Hodgkin; and* Some Notes to the Works of Dr. Edwards. *London: S. Highley,* 1832.

There is something in the title of this work, and the subjects it professes to discuss, exceedingly interesting to the veterinary student. Our patients, far more than those of the human practitioner, are exposed to "the influence of physical agents." Neither luxury nor fashion have caused much serious deviation from the mode of food which nature had prescribed; and the pharmacopeia of the veterinary surgeon is necessarily limited, by the inertness, in the quadruped, of many a medicine valuable in human practice: while the physical agents are left either to exert their natural influence, whether salutary or injurious, or, too often, their beneficial effect is counteracted by our absurd prejudices, and they are changed from ministers of health to the insidious or manifest sources of disease. There can be no subject more interesting to us than the effect of heat, and cold, and light, and atmospheric air, and moisture, and other mysterious substances or principles on our quadruped patients.

One half of the diseases of the horse and of cattle are referrible to temperature—many more to the changes effected in the atmospheric air by respiration, perspiration, and the various excretions—and the greater part of the residue must be traced to some unknown and not sufficiently appreciated atmospheric agency. The epidemics which used to thin the numbers of our quadruped servants, and which are still continually appearing, but under a milder form—the very character of many diseases, and their changing forms, at different times and seasons, have the self-same origin; nay, there is not a single disease which, in its type, intensity, and fatality, does not acknowledge the same unexplained, incomprehensible power. We have determined to devote many a page of our work to the consideration of this important but neglected subject. It may be of advantage to see

what others have done in other divisions of medical science, and what light the one may throw upon the other.

Dr. Edwards has devoted many years to an inquiry into the "influence of physical agents on life," and we have in the volume before us the result, the truly valuable result, of his researches. We shall be enabled to trace in it many an unsuspected cause of disease, and avail ourselves of many an unsuspected means for the recovery of health. We shall likewise be able to bring somewhat to the test various popular doctrines as to the agency of heat, and cold, and respiration, on the frame of the quadruped; possibly we may obtain an indistinct notion, to be more successfully followed up by others, of the sources and the preventive, if not the cure, of some of the sad destroyers of quadruped life, the murrain in cattle, the rot in sheep, the distemper in the dog—all plainly referrible to the "influence of physical agents."

It is, perhaps, to be lamented that Dr. Edwards's experiments had not stricter reference to pathology, although he has applied many of them to this end and aim of medical study. A mere spirit of curiosity seems to have dictated some of them; but the reader will derive ample instruction from the perusal of this work, and he will be pleased with the valuable "applications" which are often made, but not often enough. He considers the influence of air and moisture and temperature on the cutaneous and pulmonary respiration, and on the perspiration and absorption of the Batrachian reptiles, and on fishes and reptiles. This occupies the first and second parts. The third and fourth parts are devoted to warm-blooded animals and man: to these the present review, or rather analysis, will be confined.

The observations on the heat of young animals will appear new to many physiologists, who imagined that, because "the circulation is more rapid and the nutritive function more active in young animals, their temperature was more elevated than that of adults."

"By means of a thermometer placed under the axilla, and the bulb applied so as to be on all sides in contact with the animal, I ascertained the temperature of some new-born puppies, whilst in the act of sucking; and found it to be nearly equal to that of the mother, or about a degree or two lower: but as this difference is not constant, and is observable among adults also, it may be altogether disregarded. We are, therefore, warranted in concluding, that the temperature of the new-born animal, when placed near its mother, is not superior to that of adults. But if, at the temperature between 10° and 20° cent. or 50° and 68° Fahr., a new-born puppy be removed and kept an hour or two

from its mother, its temperature falls considerably, and continues falling, until, in the course of three or four hours, it stops at a very few degrees above that of the surrounding air.

"This effect cannot be occasioned by the want of food for so short a time; and even though it were, the difference in this respect between young and adult animals would be no less remarkable: but the temperature begins to fall as soon as the separation takes place, and the diminution is not in the least retarded by furnishing the young animal with milk from time to time. The same phenomenon takes place with kittens and rabbits."—*Pp.* 68, 69.

"If we examine the change which the temperature undergoes in the process of life, we shall find at first but little alteration; after a while the diminution will take place more slowly; then the limit to its descent will be gradually higher and higher in the scale, till, at the end of about a fortnight, it will maintain itself at a degree nearly equal to that of the adult animal."—*P.* 69.

"The phenomena above-mentioned are not, however, common to the young of all the mammalia. The heat of young guinea-pigs, born when the temperature of the air is between 10° and 20° cent. or 50° and 68° Fahr., in the above experiments, will be found to be nearly as great as that of adults; and if they be separated under the same circumstances, it is not diminished. The same is true of many other animals of this class."—*P.* 70.

It is so with all our patients, except those of the genera Canis and Felis. Dr. Edwards connects this with a curious circumstance.

"Corresponding with this difference, is a distinction deducible from the state of the eyes. Some are born with the eyes closed, others with the eyes open. The temperature of the former, according to the foregoing experiments, rises successively; and at the end of a fortnight (which is the period when the eyes open) it is nearly equal to that of adults. Thus, the state of the eyes, though having no immediate connection with the production of heat, may yet coincide with an internal structure influencing that function; and certainly furnishes signs which serve to indicate a remarkable change in this respect, since, at the period of their opening their eyes, all young mammalia have nearly the same temperature as adults."—*P.* 70.

Should we not add, that there appears here a wise and kind provision of nature, in depriving of sight, and thus the power of wandering from the comfortable bed and fostering warmth of the mother, those in whom the power of producing heat is small at birth; and giving not only the power of but the incentive to

locomotion to those who have from the beginning the power of maintaining their temperature against moderate cold. The young of none of our domesticated animals have, at first, the power of maintaining their temperature against severe cold. The farmer knows this to his cost, when, after a severe night's frost, he finds so many dead lambs. If he has neither the foresight nor the humanity to afford them the little shelter which they want (for "they are born with their eyes open," and have the power of maintaining their temperature to a very considerable degree, so that a few hurdles with straw, or a warm quick hedge to break the cutting blast, would save the greater part of them), he is rightly served.

We talk of these newly-dropped lambs "being starved with cold, and dying palsied;" but the truth of the matter is, that they so rapidly cool down from the inability to produce heat, that they become enfeebled, and motionless, and insensible, and life is literally extinguished. They soon, however, acquire this power of producing heat; for if they die after two or three days have elapsed, it is from other causes than the diminution of temperature.

The cause of death being known, the means of resuscitation are also developed. The shepherd knows well, that many a lamb, that is quite motionless, and to all appearance dead, may be revived, if he is put before the fire, or covered with warm flannel; but he knows also, that although life may be restored, the extreme debility produced by the cold is not always or soon removed;—that this is for a long while a weakly lamb, and will sink under many a disease that his companion will weather. Sometimes the recovery will be but temporary, and they will rapidly dwindle away and die.

Dr. Edwards points out another relation between the power of producing and supporting the reduction of heat—they are in an inverse ratio to each other. Dr. Edwards's physiological reasoning on this will be read with no inconsiderable interest.

"Whatever degree of care parents may take of their young, they cannot always remain with them in order to maintain their temperature at a high degree, if they are of that class of animals which are born with eyes closed, and without feathers. As soon as they leave them to provide subsistence, the temperature of their young begins to be reduced; and if this reduction were as injurious as it is to those animals which produce more heat, the greater part would perish. Other young warm-blooded animals are not exposed to similar reductions of temperature, because they are born with a more abundant source of heat. But if the external temperature were such that it lowered that

of their bodies to the same degree, and as frequently as with the groups of young animals above-mentioned, a much greater mortality would prevail among them. Hence, the danger to which they would be exposed if born in winter; hence, also, may be perceived the end which nature had in view, by generally avoiding their production in that inclement season. This is usually the case with wild animals which are born with the greatest development of heat. However considerable this may be, it would not enable them to support the cold of our climate in the early periods of life; and as they are, at the same time, stronger, more active, and more independent, their mother could not secure them from the inclemency of the air. They are usually born, therefore, in spring, or at the beginning of summer, during the fine weather. Their power of producing heat gradually increasing, they are more capable of resisting the severity of the succeeding winter."

How many of the secrets of breeding are contained in this extract! We shall probably again recur to this and other important illustrations of a similar nature; but we trust that we have said enough to excite some of our readers to peruse and study for themselves a work truly valuable, and more interesting, as connected with researches to which we have devoted a portion of our Journal.

Extracts.

Practical Observations on the Tumours which appear about the Knees of Cows.

By M. Saussol.

The disease of which I am about to speak prevails as an enzootic for the space of about half a square league, at a little distance from Mazamet. It consists of either soft or hard tumours, which are sometimes found only on one knee, and sometimes on both. It is confined to cows that pasture abroad, and I have only seen it in four dairies. It may, from the symptoms by which it is characterized, be divided into two species.

First species.—The anterior part of the knee is affected, and generally only one knee at a time; a fluid collects in the subcutaneous cellular tissue, which yields to the pressure of the finger, and is readily displaced; the pressure causes no pain, nor is there any inflammation of the integument. The animals are slightly lame at the commencement of the disease. The progress

of the malady is very slow; but the tumours insensibly increase, and in about six months attain a size equal to that of a common drinking glass; they are of an oblong form from the top to the bottom, and when they have arrived at that state, the lameness is very great, the motion of the joint is impeded, and sometimes its action is perfectly destroyed. In these cases the animals are incapable of the slightest work.

The most careful researches have not thrown much light on the causes of this affection. Can it be thus accounted for, that the farms in which it principally prevails are near the river, whence a thick fog constantly rises during the change of weather, and often at other times? Or may we suppose that the pastures in the neighbourhood of the river are injurious? This is what I cannot decide.

I have treated these tumours both at their commencement and when they had become more fully developed. Frictions with the spirit of turpentine and volatile alkali were employed at first; also the tincture of cantharides and camphorated spirit. This treatment sometimes dispersed the tumours, but it was not long before they re-appeared; I then was compelled to have recourse to firing, and tried the budding-iron, with which I pierced the skin in several places. A very clear yellow matter flowed from these openings, and the tumour subsided immediately. I afterwards put a thick layer of blistering ointment over the part which I had cauterized, and which, in a few days, provoked an abundant suppuration: the wound was washed with warm aromatic wine, and covered with tow, retained in its situation by a bandage. The animals were allowed good litter, and kept in the stable while under treatment. The tumour usually disappeared in about a month, but the lameness was not quite got rid of for some time after that.

I have occasionally passed a seton covered with blister ointment through these tumours, from the top to the bottom. The same fluid was discharged, but the skin became hard and callous, and I was obliged at last to have recourse to the firing-iron, although there was now no necessity to perforate the skin. If the disease appeared in both knees at the same time (a thing which I have only once observed), I treated them in this way, the one after the other. I have performed these operations on eight cows belonging to M. Vidal and to M. Orombel, and always with great success.

Second species.—A hard and slightly painful enlargement appears in the same part. At first it is small, and of an oblong form; but it also increases to the size of a drinking glass. It does not yield on pressure; it is not so long in developing itself;

and the animals are lame through the whole course of the disease. The sufferings which they experience seem to be very great; they lose flesh and cannot work, and when the malady is at its height cannot be employed for the slightest work. They never lie down on the side of the diseased limb, and cannot rise without great pain. I have never seen both knees affected at once.

Eight cows were attacked at once on two farms; and soon afterwards two other cows on a third farm became diseased. I made use of all the remedies which I have before mentioned, but neither setons, firing, nor frictions had any beneficial effect. Wearied, as also were the owners, by a long and fruitless treatment, I gave it up; and after having ceased to apply any remedies for eight months, I attempted the following operation on one animal:—Having confined her in a standing position, I opened the tumour from top to bottom with a bistoury; I then took out a yellowish fatty matter, which adhered to the skin, and which constituted the tumour. I afterwards cauterized the whole of the interior of the wound. This operation being finished, I filled the wound with dry tow, and, bringing the edges of the wound together, confined them with a bandage. On the third day I removed the first dressing; the tow was moistened with an ichorous yellow matter, but which afterwards, by degrees, assumed a healthy character. I dressed it frequently, and on the thirty-sixth day the wound was perfectly healed; but the hair did not for a long time grow on the cauterized part: the lameness soon disappeared.

Encouraged by this success, I operated in the same way on all my other patients in the course of a week. Five were cured, and no lameness remained from the thirty-fifth to the forty-fifth day. Two remained lame, in consequence of an anchylosis of the joint. The others resisted all curative means. The wound became deeply ulcerated, and the animals were sold for what they would fetch. *Recueil de Méd. Vét.*

Analysis of the Blood of the Horse.

By Dr. Clanny.

Sir,—I beg to lay before your readers, the result of my analysis of the blood of a young hunter, from which a small quantity of that fluid was taken on account of a slight cough. I need scarcely remark, that different portions (as in my method of analysis of human blood) were taken, and investigated as formerly explained in the pages of your valuable Journal. This analysis was performed upon the 28th of last July. Were the blood

of the horse investigated in different diseases, particularly in affections of the respiratory system, I am persuaded that the pathology of that most valuable animal would receive thereby considerable elucidation :—

Water	847
Colouring matter	98
Albumen coagulated at 160°	32
Free carbon	10
Fibrin pressed and dried	7
Salts and other extractive matter	6
	1000

Lancet.

Miscellanea.

Ferocious Cattle.

Sir Walter Scott speaking.—" Talking of a mischievous bull, puts me in mind of a similar case, which I myself witnessed, many years ago, in Edinburgh. I was proceeding from the old to the new town, by the earthen mound, at the head of which I was led for a few minutes to look at a bull that had got into an enclosure there, after the unmerciful butcher lads had driven it fairly mad. The crowd that gathered on the outside of the fence increased the brute's fierceness. At last they began to cast ropes over its horns and around its neck, thereby to pull it to a strong hold, that it might be slain in the place where it was, which drove it to its most desperate fury. Its eyes now glared madness, there were handfuls of foam flying from its mouth, with its fore feet it pawed the ground, throwing lumps of earth as high as the adjoining houses, and it bellowed so as to make one quake. It was any thing but an agreeable sight, so I moved away homewards. But before I got to the foot of the mound, an alarming shout caused me to look back, when I perceived the animal at no great distance behind me, coming on with all its rage. I had just time to spring to the top of the wall that lined the footpath, and to behold its future progress.

" I shudder to this hour when I think of what immediately I saw. Among the people that were near me and in jeopardy, was a young lady, and as you have said, she wore a red mantle, which is a very offensive colour to many of the brute creation. As I did, she also made for the wall, but had neither time nor strength to gain its top ere the infuriated animal drove towards her. She turned her back, however, to the inaccessible emi-

nence, as if to see the full extent of her fate, and then stood as nailed to it, save only her arms, which she threw aloft in her despair, which would indeed have been as fragile in defence as a rotten reed. Her tender body would have been nothing against a force that could have broken bars of brass, and horns that might have transfixed an animal of its own size. As I have said, directly towards the unprotected young lady the bull drove forward: with intentest eye he came on, he mistook his mark not an inch; for as the multitude behind him yelled their horror, he dashed with prodigious strength and madness against her.

"Was it not a miracle that the dear young woman escaped unhurt and untouched? Yet it is true: for the terrific animal struck at her so accurately, that a horn smote the dead wall on either hand, thus embracing, but from their great length shielding, her person from even the slightest damage. But the stanch wall withstood the tremendous thrust, and sent back with rebounding force, to a great distance, the huge and terrible brute, throwing him prostrate, never to rise again: for numberless destructive weapons were plunged into him before he had time to recover from the recoil. Whether the lady's hair changed colour I never heard; but some wonderful alteration might well be conceived to testify the extent of her petrified despair.

"I remember another story about a bull chase, and the catastrophe that befel my friend, the Laird of ———, as described to me by himself. The creature was a favourite, which he intended to exhibit at a competition of cattle, and which had a character for remarkable docility and good nature; attributes which the laird proclaimed, that all who meant to breed a fine dairy stock might be apprised where an excellent parentage was to be found: for every dairyman knows the value of a kindly tempered cow, not only as regards guiding and handling, but in the article of milk. Among the Dunlop cheesemakers, it is a beautiful sight, that of the milk-maid, when the milking hour comes, standing at the gate of the enclosure where the herd are grazing and ruminating, and enticing them home to her, by merely chanting —'Pretty ladies! pretty ladies!' As they approach her, she has a name for each, and a liking, according to their several merits, whilst they court her approbation by submitting to the hand that is held out. The laird had been among his cattle on the occasion referred to, and was returning from them, at a pace suited to his bandy legs and rotund corpus, when he was advertised of something extraordinary being in the wind, by a *crooning* at no great distance behind. This was no other than the voice of his favourite bull making decidedly to address him.

'Naebody can tell,' said the laird, 'what crotchet a bull beast may tak' into his head in the dog days;' so he hobbled off the best way that he could to a stone fence which was at hand.

"Breathless he gained the dyke, and attempted to clear it at a vault. But it was vain without the aid of science, therefore he had to lay hold of the top with his hands, and endeavour to arrive at a proper pitch of elasticity ere he could accomplish the feat. This he hoped for through the subservience of his legs: springing up and dropping down his body, thus to progress in his practice. But, alas! the animal, just at the critical point of time when the laird ejaculated, 'Here for it!' unceremoniously lent him a hearty slap behind: which impetus so much surpassed the worthy man's expectations and arrangements, that it drove him heels over head to the safe side of the fence, into an ugly pond of stagnant water. On hearing the laird relate this story, I said it was a mercy that his bull had so considerately watched the moment when he could advantageously volunteer his rough aid. But he would not admit that there was any kindness or discretion in such a coarse customer; for that he felt the effect of the attack for many a long day, which was less than agreeable. I next presumed that the docile creature had not by this one misdeed entirely forfeited his master's good will. And the choleric man answered, 'I dociled him: for as soon as I was able to hirple hame, I took my rifle and shot him as dead as a door nail, to teach him manners, and that nane o' his gets might be casten up to me afterwards.'"

A Day with Sir Walter Scott.

The Advantage of Diaphoretics, and a new Mode of applying them.

Edward Buckles was summoned before the commissioners by Mr. Masterson, of Aldgate High Street, for the price of a fine poodle-dog.

The plaintiff stated, that he had given into the care of the defendant, who is a dog-doctor and fancier, a very beautiful poodle, for the purpose of making him "frost-proof." In about a fortnight, news was brought to him that Prince was dying; and, upon inquiry, he ascertained that the poor animal had been harnessed between two great mastiffs to a cat's meat waggon, and had sunk under such severe toil. The dog had cost him a guinea, and was in perfect health when he put it into the hands of the defendant, from whom he now sought the amount, and the expenses of the proceeding.

The defendant said, that the dog was in a galloping consump-

tion when it came home to him, and did not like the company of the mastiffs, and that for the purpose of curing it of a "wiolent cough, he tackled him to the waggon between the other hanimals, who was very good-natred, though they wasn't the same breed, howsomdever."

Plaintiff.—They worried the poor brute in a shocking manner.

Defendant.—It's no sich a thing; I've used 'em to keep company with all sorts, and they never falls out with none on 'em. They cures the sick hanimals by rubbing 'em into a sweat, as they toddles along with the meat.

Commissioner.—I suppose you cure upon Doctor Long's principle of scrubbing.

Defendant.—I never know'd it to fail yet, barrin the hanimal was too far advanced in a hinside mortification; and there is nothing we've found out yet as will serve a dog out with a new lot of bowels, nor a man neither.

Plaintiff.—The poor dog was in such a condition that I didn't know him: I understand that he would lie down with fatigue in the streets, and the other dogs used to drag him along through the mud.

Defendant.—There's nothing sarves a dog better than a tumble in the mud; it takes away all the foolish tenderness out of him. Besides, I told the gentleman afore I took the dog, that I thought he was a going bang into the other world.

John Mickles (defendant's feeder) swore that his master cured more dogs than any other man, by the simple process of working them into "passperations" between his two mastiffs. The mastiffs understood their business perfectly well, and what they had to cure in every sick un; they goed slow, and he was blowed if they didn't behave themselves to the poor hanimal as was dead and gone like a brother, though 'twas moral impossible they could a come of the same father and mother.

The plaintiff insisted that his dog died of cruel treatment.

Defendant.—Open the hanimal; anatomise his body, and you'll see which on us speaks the truth.

The feeder.—The dog as come to us for to be cured varn't fit for no hardship; but howsomdever, master can sweat the most delicatest of 'em all till they'd eat any thing. Now this here dog as died vas a poor unsatisfactory haggravating sort of a hanimal as could be brought, for he eat no wittles; and every body knows none on us can live upon the hair.

The Commissioner said, that they could not decide against the defendant. It appeared that the plaintiff was aware of the doctor's practice, and no proof had been given that any unusual severity had been exercised. *Morning Herald.*

Monthly Report of Diseases.

From January 21 to February 20, 1833, inclusive.

Horses.—Remaining under treatment	7	
Atrophy 1, bursal effusion in knee 1, catarrh 2, diarrhœa 1, grease 2, hernia (umbilical) 1, influenza 1, laminæ inflamed 1, mange 3, necrosis 1, nephritis 1, obscure lameness 1, ringbone 1, relaxation of ligaments of hip joint 1, spavin 1, sprain (fetlock or pastern) 4, (flexor tendon) 2, stifle lameness 1, thrush 1, separation of hoof 1, swelled legs 1, tread 1	30	
		37
Dogs.—Remaining under treatment	9	
Asthma 1, amaurosis 1, canker in the ear 4, canker in the mouth 4, catarrh 1, chorea 1, constipation 2, cough (chronic) 1, cynanche tonsillaris 1, diarrhœa 5, distemper 9, epilepsy 4, enteritis 2, fracture (within capsular ligament) 1, bilious fever 1, fistula in perinæo 1, glossanthrax 1, hæmorrhoids 1, hypertrophy of the eye 1, icterus 1, lepra 1, liver tuberculated 1, lumbago 2, mange 7, ditto in foot 1, nails' morbid growth 1, paralysis 1, parturition 3, pediculi 3, pharynx, laceration of 1, pneumonia 1, poison 2, poison of lead 2, rabies 3, rheumatism 2, scirrhous tumour 1, morbid lactation 1, spasmodic colic 1, sprain 1, stifle lameness 1, teeth, diseases of 6, thyroid glands enlarged 2, tenesmus 1, vomition 1, worms 3	92	
		101
Cows.—Parturition		2
Rabbits.—Phthisis		4
Human Beings.—Bitten by rabid dogs, and operated upon		6
		150

This month has afforded a singular illustration of the power of atmospheric agency, even in diseases of the teeth and gums. One case only occurred in the whole of December and January; our present report contains no less than eleven cases, including one of glossanthrax, a disease of rather rare occurrence in the dog. These are, comparatively, trivial diseases, but they, too, are governed by some unsuspected and powerful agent. We have much to learn here. In future we will endeavour to append a short meteorological account to our monthly report.

Distemper has been more prevalent, and accompanied by chest affections, but it has been far from fatal. Cutaneous affections, both in the horse and dog, are beginning to appear much earlier than we are accustomed to observe them.

The cases of phthisis (sniffles) in the rabbits promise to be successful. Plenty of the chloride of lime is used about the hutches and the muzzles of the animals. The use of dry food is strictly enjoined, and small doses of sulphate of copper, with digitalis, are administered. The man had lost thirty. The plague is staid, and the four to whom the medicine has been given are living, and apparently, although slowly, rallying. We will report again on this. Y.

TO CORRESPONDENTS.

Mr. Clarke's letter is just received.

THE

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MR. YOUATT'S VETERINARY LECTURES

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XXVII.

Epidemic Catarrh, and Malignant Catarrhal Epidemic in Cattle —Bronchitis in Horses and Cattle—The peculiar Bronchitis in young Cattle, accompanied by Worms in the Bronchial Passages.

EPIDEMIC catarrh is a more frequent and more destructive disease in cattle than in the horse. In a cold yet variable spring, succeeding to a wet and mild winter, there will sometimes be scarcely a dairy or a stall-yard in which a considerable number of the cows do not labour under the most distressing hoose, and in which few are altogether without cough. This, however, is only the early or most prevalent symptom. Costiveness is also observed, on which your castor oil or Epsom salts, although given in repeated doses, will make no impression; and then, all at once, diarrhœa will come on, which bids equal defiance to your astringent drinks. In many cases diarrhœa is present and obstinate from the beginning. Tumours about the joints, the neck, the roots of the ears, the head generally, the back and the loins, soon succeed; at first apparently caused by the extrication of gas in the cellular membrane, and recognized by a singular crackling sound when pressed upon. It would appear as if the process of decomposition was going forward during the life of the animal. No sooner do these tumours appear, than the fæcal discharge is offensive in a high degree; the breath loses its peculiar and beautiful scent; the vital powers are rapidly exhausting; the powers of the organic system first, and soon afterwards of the locomotive, and the animal system generally. The beast is unwilling to move; it can scarcely move—it staggers as it walks. The loss of flesh can now be traced every day: the coat stares, and clings to the carcass; the appetite has been long since gone; a fetid discharge commences from the mouth and nostrils, and the end is not far off.

Treatment.—Here, even more than in the horse, it is necessary that your measures should be prompt and decisive. These singular cracklings and tumours indicate a peculiarity about these animals which you should never forget. The vascular system is more than usually developed and powerful. Cattle were designed to yield us much nutriment even while living, and plenty of good muscle and fat after death. In proportion to the extra work thus required from the vessels most concerned with inflammation, is the tendency to inflammatory fever of every description, and to the speedy exhaustion of vital organic power.

Venesection.—Bleeding will always be proper at the commencement of epidemic catarrh in cattle, regulated by the intensity of inflammation, or the apparent approach of debility, and by the effect produced while the blood continues to flow. An ox, in the early stage of inflammatory disease, will bear to lose a much greater quantity of blood than a horse; but the disease having advanced, the injury produced by too copious depletion is proportionably greater.

Aperients.—Physic should immediately be administered. The sulphate of magnesia is the preferable aperient; common salt may be given; but sulphur is scarcely powerful enough in the early stage. Some practitioners, however, give equal quantities of the sulphate of magnesia and sulphur, and, they imagine, with surer and safer effect. The usual dose of the Epsom salts would be a pound, followed up, if necessary, by half-pound doses at intervals of six hours, and assisted by injections.

Probably from the peculiar structure of the stomachs of cattle, and the expansion of *cuticular* surface, and the comparatively small supply of bloodvessels and nerves to the stomachs and even the intestines on account of the previous and complete mechanical preparation of the food for digestion, there is not the powerful sympathy which exists in the horse between the thoracic and abdominal viscera; and therefore, in the early stages of this disease, and although there may be evident chest affection, the mild aperients which we use for cattle may be administered with perfect safety. To aloes, however, I should object. This drug is uncertain in its operation on cattle—it purges only in large doses, and then it irritates and disposes to inflammation.

Medicine and General Treatment.—The sedative medicines recommended for the horse should be administered to cattle, but only in half the quantity, and always in the form of a drink, for then alone they will pass immediately into the fourth or true stomach. In the treatment of cattle, even more than in that of the horse, attention to comfort is required. A warm, but not close or ill-ventilated, cow-house is indispensable. The powerful

circulatory current of this animal should be as equally diffused as possible. The cracklings and tumours of which I have spoken indicate the necessity of keeping the surface of the body warm; and as you will find that the inflammatory stage quickly passes, and typhus under a more or less malignant form succeeds, I will allow you to do that which I was fearful of doing in the horse, viz. to resort to other means to support the strength, and restore the tone of the system, than merely to arrest the progress of the fever. The different destination of the horse and of cattle, and the different character assumed by their diseases, require a corresponding difference of treatment; and aromatics and vegetable tonics may, in small doses, be sooner combined with the febrifuge medicine, or supersede it. *Vegetable* tonics, however, must alone be resorted to, which, while they give vigour to the digestive system, and remove the debility consequent on extensive inflammation of the mucous surfaces, have little effect in increasing the force of the circulation. The practice of every scientific veterinarian, who has studied the diseases of cattle, has confirmed this distinction. Ginger, caraways, gentian, and calombo, are the recognized aromatics and tonics of the cattle pharmacopœia.

With these exceptions, the directions given for the treatment of epidemic catarrh in horses is applicable to the same disease in cattle.

The Malignant Catarrhal Epidemic.

While epidemic catarrh oftener assumes a malignant form in cattle than in horses, that disease which is malignant from its very commencement is also more common. There are very few years in which it is not endemic. It principally appears in some districts, marshy and woody, or where under-draining has been neglected, or some farms where the cattle have been exposed and half starved; but it has not for many a year spread so widely or been so destructive as in former times. In the records of it which have been handed down to us, and in our present experience of it, it differs materially in its symptoms and its treatment, according to the degree in which it is primarily an affection of the respiratory or digestive passages, or coming under the description of malignant typhus, without any particular local affection. We have to do to-night with that alone which is originally connected with the respiratory passages.

Symptoms.—The cough is frequent and painful; the flanks heave; the pulse is small, hard, frequent, and sometimes irregular; the mouth hot; the root of the horn cold; the fæces oftenest hard and black, but at other times liquid, black, and fetid. In a few days that symptom of almost every febrile af-

fection of cattle decidedly appears—extreme tenderness along the spine and over the loins,—so that the beast will shrink at the slightest touch. The cough is more frequent and convulsive, and a brown or bloody matter runs from the nostrils and the mouth; while the animal holds his head extended, in order to be able to breathe: the eyes are swelled and weeping; the patient grinds his teeth: and there is frequent spasmodic contraction about the nostrils; the animal rarely lies down, or, if he does, almost immediately rises again. The eyes soon afterwards begin to become dim; the pulse is smaller and feeble; the respiration quicker; the flanks tucked up; the tenderness on the loins subsides, and the fæces are liquid and black. The animal moans and lows, and grinds his teeth almost incessantly; the head is agitated by a convulsive motion; blood begins to mingle with the fæces; there is weakness and staggering; offensive breath; nauseous perspiration. Tumours and boils now break out in various parts: if they break, and there is considerable suppuration, the animal usually recovers, although sloughing comes on, extensive and fetid beyond that which could be thought possible; if they decrease or disappear, he as certainly dies.

Treatment.—Bleeding should be resorted to in the very early stage of the complaint, but not when debility has begun to appear. Aperient medicine should be administered if the bowels are constipated; febrifuge medicines either alone, or combined with vegetable tonics; small doses of the chloride of lime internally administered; plenty of it applied on the animal and about it, and the most rigorous separation of the infected from the sound.

In other Animals.—Sheep possess comparative immunity from this malignant epidemic. The rot carries off enough of them without any other scourge. Dogs have no disease of this character, except when distemper assumes a putrid type; and swine have rarely any disease that can properly be said to be malignant.

Bronchitis in the Horse.

We will pursue our course down the trachea to its bifurcation and termination in the bronchial passages; and there we often meet with inflammation either connected with, or the consequence of, other affections, and principally there, or almost strictly confined to the bronchial passages. We designate this inflammation by the name of *bronchitis*. It is a disease scarcely yet recognized among us, although often coming before us; it is frequently confounded with pneumonia, but it materially differs from it in its symptoms, and requires some peculiarity of treatment.

Use of Auscultation in distinguishing the various Diseases of the Lungs.—Bronchitis is not generally a primary disease. That inflammation of the superior respiratory passages, constituting catarrh, gradually creeps downwards and involves the larynx and the trachea, and at length the farthest and the minutest ramifications of the air-tubes. When you find that it is thus advancing, you will eagerly watch its progress by the assistance of immediate auscultation. Recollect the bellows-like healthy sound of the trachea; that of the healthy lung resembles a deep and distant murmur. The very word expresses the sound. But the diseased lung! how shall you ascertain the seat, the degree, the consequence of inflammation? Careful attention to a very few cases will make you perfect masters of this. The distant murmur of the healthy lung you cannot mistake; nor the crackling crepitating sound of pneumonia,—inflammation of the substance of the lungs, or of the membrane lining the cells, or the compartments or divisions of the minute *lobuli*. You hear the blood filtering or breaking through these delicate membranes, and accounting for that congestion or filling of the cells with blood which is found after intense inflammation. The bronchi are lined by a mucous membrane, and, under inflammation, the secretion of mucus is increased, and the tubes are partially obstructed. The ear, habituated to the exploration of the chest, will detect this with as much certainty as if the membrane had been fairly exposed to view, by the whizzing sound, as if the air were forcing itself through a succession of bubbles. Inflammation precedes this increased discharge of mucus: even that may be detected. The inflamed membrane is thickened, tense; it assumes an almost cartilaginous structure, and the murmur is not only louder, but has a kind of *snoring* sound. Some have imagined that a metallic ring is mingled with it. I have fancied something of the kind, but cannot say that it was distinct or convincing.

Although we cannot yet carry this so far as the practitioner of human medicine does, we can derive most important advantage from the use of auscultation. We can at least ascertain the seat of inflammation: and the presence of the morbid sound, or the gradual recurrence of the healthy one, will point out the extent of the disease; while other indications, and obtained in the same way, will as faithfully tell us the mischief and disorganization occasioned by the inflammation. Once more, gentlemen, let me urge you carefully to study the indications presented by immediate auscultation. They will rarely deceive you, and you will not have long accustomed yourselves to this mode of exploration without highly prizing it.

Symptoms of Bronchitis.—The interrupted whizzing sound has

clearly indicated a case of bronchitis. There are many corroborative symptoms which you should store in your memories. *The variable temperature* of the extremities will be an important guide,—not deathy cold as in pneumonia, nor of increased temperature as often in catarrh, but with a tendency to coldness, yet not always the same. The *pulse* will assist your diagnosis, —more rapid than in catarrh, much more so than in the early stage of pneumonia, not so hard as in pleurisy, more so than in catarrh, and much more so than in pneumonia. The *respiration* will next be examined, abundantly more rapid than in catarrh, pneumonia, or pleurisy; *generally as rapid and often more so than the pulse,* and accompanied by a wheezing sound, heard at some distance. Mr. Percivall relates a case in which the respiration was more than one hundred in a minute. Mr. C. Percivall describes an interesting case in which the respiration was quick in the extreme; and he remarks, that he does "not remember to have seen a horse with his respiration so disturbed."

In addition to these clearly characteristic symptoms, you will observe a *haggard countenance,* to which the anxious look of the horse labouring under inflammation of the lungs cannot for a moment be compared; and an evident *dread of suffocation,* expressed, not by inability to move as in pneumonia, but frequently an obstinate refusal to move; *cough painful* in the extreme; *breath hot,* yet *no marked pain* in the part, no looking at the side or flanks.

As the disease proceeds, there will be considerable discharge from the nostrils, much more than in catarrh, because greater extent of membrane is affected. It will be muco-purulent at first, but will soon become amber-coloured or green, or greyish green; and that not from any portion of the food being returned, but from the peculiar hue of the secretion from ulcers of the bronchial passages. Small organized pieces will mingle with the discharge,—portions of mucus condensed and hardened, and forced from the inside of the tube. If the disease proceeds, the discharge becomes bloody, and then, and sometimes earlier, it is fetid.

Progress.—The natural termination of this disease, if unchecked, is in pneumonia. Although we cannot trace the air-tubes to their termination, the inflammation will penetrate into the lobuli, and affect the membranes of the air-cells or divisions which they contain. There is metastasis of inflammation oftener here than in pure pneumonia, and the disease is most frequently transferred to the feet. If, however, there is neither pneumonia nor metastasis of inflammation, and the disease pursues its course, the animal dies from suffocation. If the air-passages are clogged, there can be no supply of arterialized blood.

Frequently a false membrane, organized to a considerable degree, lines the bronchial passages, under which there exists inflammation of the intensest kind, and penetrating into the parenchyma of the lungs.

Epidemic.—Like every other inflammation of the respiratory passages bronchitis is clearly epidemic. There is a disposition to inflammation in the respiratory apparatus generally, but it depends on some unknown atmospheric influence whether this shall take on the form of catarrh, bronchitis, or pneumonia. I am not, however, prepared to say that it is contagious; at least I never saw a case in which I had reason to suppose that the disease had this origin.

Treatment.—Here again your first step will be to *bleed;* and here too will be the paramount necessity of your personal attendance while the animal is bled. This is a disease of a mucous,—an *extended* mucous surface; and while our measures must be prompt, there is a tendency to debility which we should never forget. Although I have sometimes seen the horse distressed quite to the extent which Mr. Charles Percivall describes, yet he would not bear the loss of four pounds of blood without fainting. You will order, or you will take no determinate quantity, but you will bleed until the pulse falters, and the animal staggers, and in a minute or two would fall. This may probably effect your object; if it does not, it is possible that you may not have a second opportunity.

You will be cautious in the administration of a *purgative,* for the reasons that I have again and again stated; but if the bowels are evidently constipated, you must give the small doses of aloes with the febrifuge medicine, and promote their speedy action by injections, so that a small quantity may suffice.

The *febrifuge medicine* so often recommended must be administered here. Our's seems to be as yet a small pharmacopœia. We shall enlarge it by-and-by, when we have to speak of other systems and other diseases; and, in the mean time, if we have that which will generally effect our purpose, we have all that we can desire.

Some practitioners use the *white hellebore.* I have already explained my reasons for giving the preference to digitalis, except we have the horse in our own infirmary, and can cautiously and hourly watch the effect of the drug. Mr. Percivall relates a very interesting and instructive case. One of his troop horses had bronchitis; his respirations reckoned upwards of a hundred per minute, he puffed hard at the nostrils, and heaved laboriously and painfully with his flanks; and his countenance betrayed extreme inward oppression. He was bled, and, in the course of

thirty-six hours, three drachms of hellebore were administered. Twelve hours after the last dose he was found lying down—one minute extended upon his side, the next lying with his head raised up, puffing violently at the flanks, looking back at his belly, and pawing. The pulse had sunk so low that it could hardly be felt. An ounce of laudanum was given to him in gruel; he soon became tranquil; the respiration subsided, and he recovered.

A *blister* is always indicated in bronchitis—it can never do harm, and it not unfrequently affords decided relief. It should extend over the brisket and sides, and up the trachea to the larynx.

His food, if he is disposed to eat, should be mashes. No corn should be offered, nor should the horse be coaxed to eat.

Bronchitis in Cattle.

This is peculiarly the disease of cattle. Every minor inflammation of the respiratory passages seems to terminate in bronchitis in these animals, as regularly as it does in pneumonia in the horse.

Cause.—The principal and sadly neglected cause is that *winter cough*, which cruel neglect generally produced, and which inattention and idleness have suffered to continue. Cough is so frequent in the cow-house, that neither the herdsman nor the proprietor takes the slightest notice of it. It is most frequent after feeding or watering, and it goes on for weeks and months, and no harm seems to be done; but, at length, the animal begins to lose flesh, and the milk diminishes. Then, and when it it is too late, the farmer begins to look about him. It is now confirmed bronchitis, complicated with inflammation of the parenchyma of the lungs. The false membrane of which I have spoken in the horse lines the bronchial tubes—the inflammation of the mucous coat beneath is intense—the foundation is laid for consumption—the animal becomes a mere skeleton; and they who are accustomed to cattle will understand me when I say, that the poor beast crawls about with merely a dry skin covering a set of creaking joints.

The moment the cow with cough is in the slightest degree off her feed, she should be attended to; indeed, the simple fact of her having violent cough, should induce the farmer to adopt some remedial measures. She should be bled; a dose of physic should be given, and a few febrifuge drinks: she should be put in a sheltered comfortable place, and have a good mash given her every day.

The prevailing causes of this inflammation of the bronchial

passages are various. If any of the southern breeds are transplanted far north, they will require a great deal of attention and nursing, in order to ward off this insidious and fatal affection. I have been twice consulted respecting a beautiful short-horned breed, which had been introduced into the northern counties of Scotland, and the greater part of which died evidently consumptive in less than two years. In the first case, I recommended one cross with the native breed, and then to go back to the Durhams. It perfectly succeeded. A constitution better suited to the climate was acquired, and, after one or two generations, the form of the short-horn seemed to be scarcely affected, and certainly not one good quality was impaired.

In the other case this was peremptorily objected to: the deterioration of the breed was regarded as certain. Then by gradually using less nursing when the animal was well, and a great deal more nursing as soon as this cough appeared, and by early bleeding, and the use of the febrifuge drink, we prevented any confirmed bronchitis, and the cattle were gradually inured to their new and colder climate.

Unnecessary exposure to, and over-anxious care to preserve them from, cold and wet, are equally injurious. Cough and all its worst consequences are never more frequent than in a hot and crowded cowhouse, and to which fresh air is rarely admitted.

The food of the animal is often not a little concerned in the production of cough, and even bronchitis. I have seen many a chest affection rapidly and fatally succeeding to the substitution of mouldy hay, and bad straw for wholesome food.

In proportion to the purity of the breed, and especially if the *in-and-in* system has been too closely followed, is the predisposition to these chest complaints.

To young cattle bronchitis is particularly destructive. When they are kept in the straw yard during winter upon scanty food, and the forward ones drive the others about and scarcely permit them to eat at all, pulmonary complaints are exceedingly frequent, from the combined influence of wet and cold, and fear and hunger.

Bronchitis from Worms.—There is one species of bronchitis which must not pass without observation. A yearling has often a cough unusually distressing. The intermissions are short, the paroxysms exceedingly violent. The beast is off his feed, hidebound, his belly tucked up, his coat staring, his flanks heaving, and it is almost heart-breaking to hear him cough. This occurs principally on low, marshy, woody land; and is confined to young cattle, and principally yearlings. The farmer knows too well

what is the matter, and the uniform fatality of the complaint; and he either slaughters the animal at once, or suffers him to take his chance, and rarely or never requires the veterinarian's aid. The beast at length dies; and the whole of the bronchial passages are found to be completely choked up with worms. They are of the *strongylus* species, and either the *filaria*, or the *veinulosus*, but chiefly the former. Many of them are also found in the trachea; and the mucous membrane of the trachea and bronchi presents an appearance of the intensest inflammation, and by which the animal was destroyed.

The generation of these parasitical animals will be best discussed when we come to the consideration of the different entozoa of the intestinal canal. In the human being worms are oftenest found in an injurious quantity in a cold and moist state of the atmosphere, or in moist situations and especially in those that are covered with the vegetable productions peculiar to such a locality: also in young subjects, and where the constitution is somewhat enfeebled. We have all these predisposing causes here; and yet the generation of these animals, and the mode by which they are introduced into the system, are perfect mysteries.

Whether they are the cause or effect;—whether, amidst the vitiated secretion of the inflamed mucous membrane of the bronchi, the ova find their proper and destined nidus, and are there hatched into life;—or the membrane is irritated and inflamed by the presence of these parasites, deposited ere the part was diseased, are subjects that will be better illustrated hereafter. In point of fact, they are found to occupy the whole of the bronchi, and by the irritation which they produce they destroy the beast.

Treatment.—The question that most concerns us now, is the mode by which they are to be got rid of. Nothing can be brought to bear upon them immediately. No turpentine or other fluid destructive to worms can be introduced into the bronchial tubes. Can any deleterious gas be employed? Can it be introduced into the system in a quantity not sufficient to injure the beast, yet with the chance of destroying these vermin? Might pieces of tow, impregnated with a solution of chlorine, be spread over the trachea, and particularly the lower part of it? Or might the animal be shut into a close place, and made to breathe diluted chlorine gas, or nitrous acid gas? A portion of it would pass the watchful sentinels in the nasal cavities and at the entrance into the larynx, and possibly enough to effect the desired purpose. The animal would be not a little annoyed; he would for awhile cough with even greater violence, when the worms dying, or their hold loosened, they might be expelled. This is really worth trying, and should you succeed, gentlemen, you

would gain much credit, and confer an essential benefit on your country; for thousands of young cattle are destroyed every year by these worms in the air-tubes.

Oil of tupentine is peculiarly destructive to worms. It is also one of those drugs that enter into the circulation; that are recognizable in the urine and the breath, and produce their effect by immediate contact with the part on which they operate. Can it, through the medium of the circulation, be brought into contact with these worms? It is worth the trial. Or are there medicines which promote expectoration, or loosen the morbidly viscid mucus secreted in these tubes, and cause it to be more easily discharged in the act of coughing? There is no doubt that certain drugs effect this purpose in the human being; the exhalents of the bronchi under their influence pour out an increased quantity of mucus, and that far less adhesive, and expelled with little difficulty. From the erroneous habit of contracting our pharmacopœia, and shunning almost every drug in which the human practitioner places confidence, we have made few experiments for this purpose even on the horse, and none on cattle. The turpentine should take the precedence in this mode of treatment; and, that failing, it might be worth while to try the effect of squills or gum benzoin, or the balsams of Peru or Tolu.

Worms in the Bronchial Passages of other Animals.—Sheep are far less troubled with these worms than young cattle, but several cases are on record in which the bronchi of these animals have been filled with the strongyli. In the deer they are oftener found. They are exceedingly troublesome, and often fatal in the hog, and they destroy thousands of poultry. In the year 1822 almost all the pheasants in Colonel Berkeley's preserves died; and on examining them the bronchial passages were choked with worms. Turpentine might be administered to the sheep and the hog;—to birds it is poisonous.

ON THE NEGLECT OF THE MEDICAL TREATMENT OF CATTLE IN THE PAGES OF "THE VETERINARIAN."

By Mr. W. Clarke, *Wymondham, near Melton.*

Although not a member of the veterinary profession, yet, as an agriculturist, I have always taken a great interest in every thing relating to it, and therefore devour with avidity the intellectual repast which your excellent periodical offers; but among the great number of highly respectable correspondents who continually enrich it with their valuable communications on the pathology, &c. of the horse, I am extremely surprised that there are none who appear to take that interest in the investigation of the

diseases of cattle which that important subject so richly deserves; for it has been observed, that when we compare the number of cattle and horses, the former will be found greatly to predominate, and they are, I should consider, equally, and in some respects even more, the objects of the veterinarian's attention than the horse. Owing to the vicissitudes of weather, and the exposure to which they are subjected, they are constantly disposed to contract a series of disorders, widely, if not essentially, different from those of the horse; and opening to the diligent and observant veterinarian a wide field for the exercise of his most accurate pathological research, and, I think, I may add a lucrative one. When the agriculturist sees the veterinarian endeavouring to bring his medical knowledge to the investigation of this important subject, it is evident that there are few of the higher and observant part of that class who would endeavour not to assist him by joining their observation to his, and furnishing him with every possible opportunity to facilitate his researches. Mutual interest would stimulate them. The surgeon would receive the implicit confidence of his employer, and the illiterate farrier and cow-leech, with his empirical nostrums, be driven from the field, never more to assert his supremacy. This I should consider obvious to every member of the profession, and, therefore, it is more surprising that they have never given it due consideration.

Being, as I before stated, not a member of the profession, I cannot form any idea of the reason which produces this apathy of spirit amongst them. Is it, I might ask, because they consider themselves inadequate to the task, in consequence of the slight and indefinite information they have been able to obtain respecting it? Allow me, then, to say, I should consider the only way to alleviate this, is, strenuously to endeavour to concentrate all the information they can on the subject, and thus, by mutual observation and scientific discussion, to elicit from each other that knowledge of which they are in possession. Aided by such a vehicle as your widely disseminated publication, I should consider the advantages which would ensue would be incalculable, not only to the present, but to the rising part of the veterinary community. The student would find himself stimulated by the example of his seniors in practice, and would endeavour, by his own exertions, to qualify himself for the successful discharge of this important branch of his profession. I should not wish for a moment to see the attention of the veterinarian diverted from my old friend and favourite, the horse (towards whom I feel an indelible attachment, and with whom I have for many a long day shared the noble toils and pleasures of the chase), but I consider, in a national point of view, that the ox

is equally worthy the attention, and that, too, the most minute attention that can be bestowed upon it; and I would sentence that surgeon who is engaged in this branch of practice, and refuses to contribute his mite of information, to be deprived henceforth of the privilege of partaking of that pre-eminent part of British fare, a piece of roast beef. I am extremely surprised that the noble example of Mr. Youatt, whose lectures contain much excellent information on this subject, and whose appointment to the office of public lecturer at the University I consider an auspicious event to the agricultural as well as to the veterinary world, has not influenced the members of the profession to endeavour to aid that gentleman, who, I believe, at present stands alone, entirely dependent upon his own spirited and indefatigable exertions. I shall conclude, gentlemen, by expressing my ardent desire that these few plain and obvious remarks may have the happy effect of rousing the dormant energies of some of the many talented contributors to your journal, and constraining them to exclaim with Phaeton—

Pudet hæc opprobria nobis.
Et dici potuisse & non potuisse refelli;

and by future perseverance to compensate for past neglect. Should this desideratum be accomplished, I shall consider myself, although but a homely and not very perspicuous, yet an extremely fortunate scribe. With every feeling of pleasure at the increasing prosperity of your valuable Journal, I shall subscribe myself, Gentlemen, your well wisher, W. C.

We cordially thank our agricultural correspondent for this communication. It gives us pleasure to know that our Journal is read and valued beyond the pale of our own profession; and from such men as Mr. Clarke we can best learn what is needed to render our work more interesting and useful to the agriculturist, and, by no very circuitous induction, more interesting and useful to the veterinarian also.

The subject to which he alludes, the general and medical treatment of cattle, has been comparatively neglected in our Journal; yet not to the extent that our correspondent imagines. Mr. Youatt is not so perfectly deserted. The names of Cartwright, Cotchiefer, Dick, Dickens, Farrow, Garland, Hales, Karkeek, King, J. Sewell, Shield, W. C. Spooner, and Tait, immediately occur to us as having, to a greater or less extent, treated of the maladies of cattle, and some of them most scientifically. True! half of them were pupils of him, or of the Professor of the Edinburgh school, and the remainder acquired their knowledge of the diseases of cattle by the painful process which

a most respectable practitioner thus feelingly describes in one of the volumes of THE VETERINARIAN: "Many persons, by whose confidence and support I have been honoured, have bullocks and sheep as well as horses, and which occasionally require veterinary aid; but, alas! when I was first consulted, I was obliged to confess my total ignorance of the subject. I should have been an impostor, had I professed an acquaintance with the disorders of these animals when I had never studied them. The consequence was, that some other person was called in, while I was a mere looker-on, in which capacity many painful reflections upon the great omission in my early education were forced upon me; and I was taught, by dearly-bought experience, that a great deal more is to be learned in the veterinary profession than some of our instructors seem to imagine."

This eloquent avowal of the situation of nine-tenths of the veterinary profession, when they commence practice, will sufficiently explain to Mr. Clarke the reason why there have been so few writers on cattle medicine in THE VETERINARIAN. They "would have been impostors, if they had professed an acquaintance with that which they had never studied," and it will make him and us grateful that there have been so many and such good writers on the subject. We may truly say, that the profession generally owes almost all that it knows of the diseases of cattle to the pages of THE VETERINARIAN.

We are glad that an agriculturist has taken up this subject, for it is in his power to afford material assistance in remedying the evil. The veterinary profession in England owes its origin to agriculturists. The corner stones were these memorable resolutions of the Odiham Society, in July 1785: "Resolved, that farriery is a most useful science, and intimately connected with the interests of agriculture. That its improvement, established on a study of the anatomy, diseases, and care of animals, particularly of horses, cows, and sheep, will be an essential benefit to agriculture; and that the society will consult the good of the community, by encouraging such means as are likely to produce the study of farriery upon rational and scientific principles." The building seemed to have been completed by this equally memorable communication of the committee of the Veterinary College to the Odiham Society, bearing date the 18th February, 1790, stating, that "they are engaged on the reformation and improvement of farriery, and the treatment of cattle in general." Strange to say! this writing was scarcely dried ere *the control of the Odiham Society was shaken off;* and this institution, which was to perfect "the treatment of cattle in general," became, *under a committee of professional men,* a mere school for horse knowledge.

The Highland Society of Scotland, feeling, in the language of Sir John Hope at their last meeting, that while "it was very proper for them as a body, and as individuals, to promote the amelioration of the breeds of their different descriptions of cattle and other stock, if they did not beside take the means of preserving the health of stock, they did less than their duty," founded a school of veterinary instruction, embracing all the legitimate objects of the veterinarian's care; or, at least, they contributed most zealously to the formation of that school, and appointed the professor of it lecturer to themselves; and, the Society *continuing to be connected with that school, it continues to embrace,* (what the known character of the Professor would otherwise have secured to it), *adequate instruction with regard to the diseases of all domesticated animals.*

What is the consequence of this?—why, that the pupils of that school, being known to possess, generally speaking, a sufficient knowledge of the whole of their profession, receive, in the language of Mr. Clarke, "the amplest confidence of their employers; and the illiterate farrier and cowleech, with his empirical nostrums, are driven from the field."

There is scarcely a dairy or distillery in Scotland, where many cows are kept or oxen fattened, the medical treatment of which is not superintended by a veterinary surgeon; and the director of one of them told us, in the last autumn, that they had found their interest in so doing. There is scarcely a district agricultural society that has not its regularly attached veterinary surgeon; implying in the appointment the kind of knowledge which he possessed, and binding him to the diligent study and practice of those branches of his profession. On the other hand, in the metropolis of England, although a veterinary man is attached to most large horse establishments, we know not the dairy or the distillery where he is systematically the medical adviser; and we do know that the aggregate practice of all the veterinary surgeons on the twelve thousand dairy cows of the metropolis would not afford a decent subsistence for one family.

In the country, too, the veterinary surgeon who has proved that he understands the diseases of cattle, is perhaps, after a somewhat long trial, freely employed; but until he has given this proof, the cowleech is resorted to, ten to one sooner, because it is imagined that the latter may know something, while it is feared or believed that the former knows nothing.

Such is the bearing, the cruel bearing of things on the reputation and emolument of the veterinary practitioner; and we are inclined to think that the bearing is still more injurious on the interests of the agriculturist.

Our friend, Mr. Clarke, and others like him, can do us and himself much good here. Let them patronize the man, who, in their neighbourhood, appears to devote himself most diligently to this branch of his profession. Mr. Clarke belongs, perhaps, to some district society; let him endeavour to obtain for this man the honorary title of veterinary surgeon to that society. The title would not long be honorary; for he would be remunerated by an increasing knowledge of his profession, and perchance by something more substantial: and the country would be benefitted, for his brethren would strive not to be quite eclipsed by him, or that they might be deemed qualified to succeed to him.

And if the great societies, the Bath and West of England Society, and the Smithfield club, were to appoint their veterinary surgeons, or to institute lectureships, or patronize schools devoted to instruction on the medical treatment of cattle and sheep, a new and irresistible impetus would be given to this most important branch of veterinary study;—the old school would return to that system from which it ought never to have been permitted to deviate, and other schools would not have the power to deviate at all. The veterinary profession would be put upon its proper basis, and the country would be greatly benefitted.

To the study of the diseases of cattle in a veterinary school we would add one other branch, and that at present totally neglected. We will describe it in the language of Sir Astley Cooper at the last dinner of the veterinary students. "If there is any branch of science which more than another concerns the veterinary student, it is chemistry, and particularly *that division of it which concerns the soil, and its improvement, and its produce, and renders him useful to, and, in a manner, identified with those among whom he will have to live.*" Is there no one to be found to fill up these chasms? Y.

ON ARABIAN HORSES.

[We extract the following account of the Arabian horse from the "*New Sporting Magazine.*" This work rapidly increases in interest and value. The reader may, indeed, calculate on finding something good in it, when he learns that Nimrod, the prince of sporting chroniclers, and the author of those excellent letters on "the Condition of the Hunter," is one of the chief contributors. This paper was originally taken from the "Asiatic Journal," a work of established and sterling merit.]—Edit.

"The collective term whereby the Arabs designate horses in general is *khayl.* They distribute them commonly into five

great races, all originally from Nejed, and they have been studious, from time immemorial, to preserve with religious care the purity of the races. Some authors trace them back to the most remote period of paganism, assigning as their sire the famous stallion Mashoor, the property of Okrar, chief of the tribe of Beni Obeyda; others assert merely that they are the issue of the five favourite mares of the prophet, named Rabdha, Noama, Wajza, Sabha, and Hezma. Whatever be the fact, the following are the names of the races, which, according to the vulgar notion, are derived from different districts of Nejed, where they were born:—Sakla-wooyeh, Kohayleh, Manakieh, Jelfiyeh, Thooeysiyeh. The first is subdivided into Jedran, Abriyeh, and Nejm-el-subh; the second into Ajooz, Kerda, Sheykha, Dabbah, Ebnghooeysheh, Khumeyseh, and Abumoarraf; the third into Shemaytha and Ashayr; the fourth presents a single branch only, that of Estemblath; the fifth has none. Besides these principal races, the Arabs have several others less esteemed; namely, those of Henaydi, Abuarkoob, Abayan, Sheraki, Shooeyman, Hadbeh, Wedna, Medhemeh, Khabitha, Ameriyeh, and Sada Thookan. The different races have not any characteristic marks whereby they can be distinguished from each other. They can be recognized only by means of certificates of their genealogy, drawn up by their proprietors, and attested, in which the issue, male and female, are specified with great exactness; so that an Arabian horse offered for sale is usually provided with his title of nobility.

"The noblest conquest ever made by man was that of the swift and generous horse, which partakes with him the fatigues and the glory of war; but no nation knows so well how to appreciate it as the Bedouins. We must visit the deserts of Nejed, its native country, and those of the Hejjaz and of Yemen, where this animal multiplied at an early period, in order to judge of the interest with which it inspires them, and to learn the different races to which it may belong, and which the princes of Europe, as well as those of Asia, have always been desirous of propagating in their territories. The decided predilection, the almost fraternal affection, which the Arabs entertain for their horses is founded not only on their utility to them in their active and wandering life, but also on an ancient prejudice, which induces them to regard horses as beings endowed with noble and generous sentiments, and an intelligence superior to that of other animals. Thus they are accustomed to say, 'After man the most eminent creature is the horse; the best employment is that of rearing it; the most agreeable posture is that of sitting on its back; the most meritorious of domestic actions is that of feeding it.' They add, after their prophet, 'As many grains of barley as are con-

tained in the food we give to a horse, so many indulgencies do we daily gain by giving it.' Mahomet said, moreover, to his disciples, 'I particularly recommend to your attention the brood-mares, because their back is a seat of honour, and their belly an inexhaustible treasure.' The following is the same legislator's account of the formation of the horse:—'When God wished to create it he called the south wind, and said, "I desire to draw from out of thee a new being; condense thyself, by parting with fluidity:" and he was obeyed. He then took a handful of this element, now become tangible, blew upon it, and the horse was produced. "Thou shalt be for man," said the Lord, "a source of happiness and wealth; he will render himself illustrious by ascending thee."'

"History has commemorated the names of celebrated horses of antiquity, both Arabian and Persian. Amongst the latter, Raksh was the steed of Rostam, one of the heroes of the *Shah Nameh;* Shebdeez was that of Khosroo Parvez, the Sassanide king of Persia, and Gulgoon that of Sheereen, wife of that prince; Dahes was a famous Arabian horse, and Ghabra a mare of the same race, not less renowned. The master of the former was Kays ebn Zohayr, of the tribe of Dobian; the latter belonged to Hammal ebn Bedr. These two warlike animals, contending in a race during the sports and amusements of a national festival, occasioned a disastrous war between the two tribes by whom they were respectively possessed, and which lasted forty years. D'Herbelot speaks* of the *Kamel-el-Sanateyn,* a work which treats of the keeping and physicking horses. Another work, still more curious, has the title of 'Summary of all that can be desired to be learned respecting the different Races of Horses.' According to this author, these races sprung from a stallion and a mare named Zad-al-rakeb and Serdet Shekban, which belonged to Muthayer ebn Oshaym, one of the most ancient chiefs of the tribe of Yemen. It is in the same book that mention is made of the Safenat, horses of the same species with those that were offered as a present to Solomon by the Queen of Sheba. The author gives a table, according to which, there exist one hundred and thirty-six races of Arabian horses, three Persian, nine Turkoman, and seven Kurd.

"Arabian horses are, in general, of a delicate constitution, but accustomed to the fatigues of long marches; light, active, and of surprising swiftness. They have little belly, small ears, and a full, flowing tail. These are the distinctive marks by which they may be recognized at first sight. It may be added, that they are almost invariably exempt from apparent deformities;

* *Biblioth. Orient.* art. *Faras.*

and so gentle, so docile, that they allow themselves to be rubbed down and managed by women and children, with whom they often sleep in the same tent. Till the age of four years they are ridden without a saddle, and not shod. They will endure thirst for days together, and are commonly fed with camel's milk alone.

"The physical qualities which the Arabs prize most in a horse are the following:—neck long and arched; delicately formed ears, almost touching each other at the ends; head small; eyes large, and full of fire; lower jaw lean; muzzle bare; wide nostrils; belly not too broad; sinewy legs; pasterns short and flexible; hoofs hard although not ample; chest broad; rump high and rounded. Whenever the animal combines the three beauties of head, neck, and rump, they regard it as perfect. This is what Horace has laconically expressed in this verse,

'Pulchræ clunes, breve quod caput, ardua cervix.'

"It will not be useless to remark, that amongst the natural signs of the horse several are esteemed by the Arabs sinister and unfavourable, and some they believe to be capable of producing happiness to the owner of the horse. It is needless to give this double enumeration.

"The different colours of Arabian horses are clear bay (*ahmar*), brown bay (*edhem*), sorrel (*ashekwar*), white (*abiadh*), pure grey (*azrak*), mottled grey (*raktha*), and bluish grey (*akhdhar*). Blacks and light bays (*aswad* and *ashehab*) are unknown in Arabia; they are found only in Persia, Tartary, and Turkey.

"The races of Nejed are commonly regarded as the noblest; those of the Hejjaz as the handsomest; those of Yemen as the most durable; those of Syria as the richest in colour; those of Mesopotamia as the most quiet; those of Egypt as the swiftest; those of Barbary as the most prolific; and those of Persia and Kurdestan as the most warlike.

"Eulogies of the horse abound in Oriental writings, including the *Old Testament* and the *Coran*. The description of the war-horse in the *Book of Job* is well known.

"The Moallaka of Lebid and that of Amr-el-Kays contain highly-wrought descriptions of the horse. In the latter it is said, 'he has the reins of a gazelle and the legs of an ostrich; he trots like the wolf, and gallops like the fox; his haunches are large and strong; when you look at him behind, his tail, which trails on the ground, covers the space between his legs; when he stands beside my tent, the glittering polish of his back is like that of marble on which perfumes have been rubbed for a young bride on her wedding day'.

"The most splendid encomium on the horse that could possi-

bly be made, by exhausting all the resources of the Asiatic style, is unquestionably that which occurs in the collection of fugitive pieces of Ghefoori, a Persian poet but little known, but whose elegant and fertile muse might rival those of Nizami and Anwari. 'This courser,' he observes, 'is so full of mettle, that one might say it was quicksilver that flowed in his veins. At the sight of his graceful and elegant figure, the antelope hangs its head in modest confusion; the warlike leopard would exchange the terrible claws with which he is armed for his hoofs; like the earth itself, always well-poised in his motions, not less rapid than the torrent which has forced its bounds, he equals fire in ardour, and wind in swiftness. His forehead, shaded with a fore-top which Aurora seems to have taken delight in painting with her own delicate hand, is the seat of pride. Audacity sparkles like lightning in his looks; his nostrils are inflamed; he has the courage of the lion, the docility of the dog, and the strength of the elephant.'

"Horse racing was much in vogue amongst the ancient Arabs, as it is still amongst their descendants; but the national and solemn exercises, denominated *Messabeka*, have at all times occasioned bloody quarrels between the tribes, whose chiefs upon those occasions disputed the honour of pre-eminence. Horse races existed in Persia, and do so still, under the name of *Asbdivani*. The present Shah, who has a numerous stud, usually attends them; his favourite horses appear first in the list, mounted by young and elegant jockeys; and he proclaims the conquerors, distributing the customary prizes with his own hand.

"The Persian and Turkoman horses, whose figures are much alike, differ from the Arabians in this, that they are more corpulent and their coat is not so soft to the touch. Moreover, it is an opinion pretty generally received in the East, that the latter are specially distinguished from the others by the repugnance they evince towards clear water, whilst that which is turbid pleases them to such a degree, that they never fail to prance about in any they may pass through.

"The finest horses of Arabia are now met with amongst the Anazes, and particularly amongst the Rovalas, a principal branch of the great tribe of the desert; those of Persia in Khorasan; those of the Kurds on the northern and eastern frontiers of the same kingdom, and those of the Turkomans towards the shores of the Caspian Sea and in Syria.

"Speaking of horsemen, it is proverbially said, the Arab is without grace, he mounts mechanically; the Persian is dexterous and impetuous; the Kurd awkward but intrepid; and the Turkoman proud and terrible."

A CASE OF THE SUCCESSFUL TREATMENT OF GLANDERS BY FUMIGATION WITH CARBONIC ACID GAS.

By Mr. Storry, *V.S., Pickering.*

It seems to be the opinion of some of the most eminent men in the veterinary profession, that there has not yet been found a *certain* cure for the glanders; and more particularly, as it would seem from Mr. Youatt's remarks in his lectures on that baneful disease, he considers all the means hitherto used as unavailing; and he undoubtedly has adduced strong and cogent reasons to shew the difficulty, if not the impossibility, of reaching the seat of the disorder by any means hitherto made use of. When, however, he asserts, that "we can get at but a certain small portion of the membrane by any means that we *can* adopt," I must beg leave to state, with all due deference to Mr. Youatt, that I consider the difficulty not so great as he apprehends; but then the thing must be effected by means different from any he has named, or that have ever yet been attempted, that I am aware of, except by myself.

Without further preliminary remarks, I shall proceed to lay before you an account of the treatment of a case of the most confirmed glanders in a mare belonging to Mr. John Barry Smith, of Edston, near Kirby-moorside. On examining her, I found the pituitary membrane in a state of ulceration, and nearly destroyed: there was a discharge of muco-purulent matter of a most fetid and offensive kind, of a greenish yellow colour, and streaked with blood; the submaxillary glands were somewhat enlarged, and there were other symptoms which left no doubt on my mind that the disease was glanders. There was, besides, an oozing from one of the fore legs, which indicated farcy.

Treatment.—I bled, and gave a calomel and aloe purging ball. I inserted a rowel under the jaw, and dressed it with blister ointment for a few days. I then began to fumigate the nasal cavity, by pouring a sufficient quantity of sulphuric acid upon prepared chalk mixed with water. I also gave, occasionally, black sulphuret of antimony, combined with vegetable tonics, white hellebore, &c. The fumigation, I scruple not to say, reached the seat of the disorder, and, together with the other treatment, effected *a complete cure.* It is nine years since this cure was performed; and I saw the mare repeatedly for five years afterwards, and not the least symptom of the disorder appeared during that period. After this Mr. Smith removed into the neighbourhood of Thirsk, and I have not heard of the mare since.

I have lately purchased a glandered horse, in order that I might subject him to the same treatment; and I confess that I have considerable hope of effecting a cure, and the case is going on in a very favourable way.

THE IMPORTANCE OF THE VETERINARY ART.

[As we were looking over an old Gentleman's Magazine (1790), we stumbled on the following plea for our profession. It is so excellent, that we are induced to present it to our readers.—EDIT.]

It must be a matter of no small surprise to you, and to every friend to science, that in a country where the other arts have been raised to so high a point of perfection, veterinary science alone, in itself so excellent, and of such extreme utility to society, should be neglected, and consigned to the hands of incapacity and ignorance.

That the art of veterinary medicine is of such importance, I wish to make appear through the medium of your magazine; not fearing that the public of an enlightened and judicious nation will readily yield to the impression of truth, and be as willing to vindicate this branch of knowledge also from the contempt under which it so unjustly labours, as those which, under their protection, have been already extended to the general benefit and information of mankind.

The veterinary art is a practical application of sure and scientific principles to the preservation of health in domestic animals, and to the cure of their diseases, in the same manner as the art of medicine applies them to the health and preservation of man; and the science on which this art is grounded, and which it requires for its perfect exercise, comprises the natural history, anatomy, physiology, and pathology of those animals, together with such portions of the vegetable and mineral kingdoms as are connected with them, either in the way of food, ailment, or remedy.

Such is the nature, and such the extent of veterinary medicine; by which view its excellence is sufficiently evidenced to those who know the importance of the art of human medicine to man, or know how to estimate the value of truth and certainty above ignorance and error: and if our farriery, which presumes to represent this art, were to be tried by this test in the single instance of the horse, we should exactly find it wanting in that *fundamental science,* which alone renders it either efficacious or secure.

The deplorable state of farriery, considered as a branch of natural knowledge, has long been a subject of lamentation; destitute, in general, of either principle or reason, and playing with instruments and poisons like a madman with fire. The good sense of the nation has, at length, caught the alarm; the art itself is suspected, and its practitioners distrusted: and although some of late date, desirous of bringing it some ready relief, have brought to it principles which they have drawn from their knowledge of the human system, yet, however good their intentions may be, they have, in many instances, only served to introduce new errors, inasmuch as the laws of the several animal economies are by no means always uniform, but are found to be often different from, and sometimes contrary to each other. To reason thus analogically from the man to the horse, is as preposterous and as insufficient as to conduct a disease in man merely by a knowledge of the structure of brutes.

It is necessary to make a special and accurate investigation of the economy itself—the different effects which the different subjects of the *materia medica* have upon it; and to repeat these inquiries with the same exactness with respect to every animal that may be considered a natural object of the art.

A plan of study like this requires leisure and competence, and is far beyond either the capacity or the circumstances of those to whom farriery has been hitherto abandoned; and yet, such is the importance of the art, that a course of studies as long and as circumstantial is indispensable for those who would fully, fairly, and honourably engage in the exercise of it.

Its importance cannot be called in question, as it is in direct proportion to the importance of the objects on which it is employed. The value of our cattle is the infallible rule by which to estimate the value of the art; and when to their intrinsic value is added, that which they derive from their *caducity*, we must allow that art, whose office it is to preserve them in a condition wherein we may deduce from them all the benefit that they are capable of procuring, as to be in itself well deserving our concern and esteem.

If we consider its present state in this country, under its appellation of farriery, we see it in as deplorable a situation as was the art of medicine during the barbarous centuries when the gross ignorance of its professors brought a disgrace upon the art itself; and when many diseases, which now yield readily to a judicious treatment, raged without controul. Yet that the veterinary art, like the art of medicine in the hands of philosophical and judicious persons, may be raised to respect and esteem, we see by the example of ancient times, and by the

present examples of France, and some other countries on the continent of Europe.

He then takes a survey of the former state of the art in Greece and Rome, and its present one in most of the continental states; and he thus concludes:—"To this country, whose breeds of cattle are hardly equalled in any part of Europe, the numbers of which render them objects of great concern, and which is still increased by the high price they bear—to this country it still belongs to follow the same example, and, in advancing the art to an height hitherto unattained, to make it some amends for the neglect we have hitherto shewn it, and to extricate it effectually from the ignorant and barbarous hands that till now have ventured to exercise it.

ΦΙΛΙΠΠΟΣ.

ON THE EPIDEMIC CATARRHAL FEVER OF THE LAST WINTER.

By Mr. Hayes, *V.S., Rochdale.*

From October 1832 to March 1833, there have been numerous cases, in this district, of catarrhal fever, joined with inflammation of lungs, and liver, and trachea, and œsophagus, and larynx, and pharynx, and the mucous lining membrane of the bowels; frequently with all the symptoms of malignant catarrh, and even these in an aggravated form. In some cases there was excessive diarrhœa: the fæces were black, liquid, mucous, and bloody, exceedingly fetid, and accompanied by such extreme debility, that the animal could not move without falling: there was quick pulse, injected nose, mouth and gums as red and dry as possible, and resembling a piece of lean raw beef. In some there was extensive anasarca; in others, phlegmonous tumours in different parts of the body; in others, again, there were spasmodic jerkings, and lameness in the legs, and shoulders, and hips. On the fourth day they generally began to bleed at the nose, a very dark-coloured thin blood, which continued for four or five days, or until the bowels became set; in some, for about the first two days, the bowels were constipated; the pellets of dung came enveloped in a thin tissue of the mucous lining of the bowels: this also came in great quantities, whether the fæces were hard, or pultaceous. There was total loss of appetite for five or six days; the temperature of the extremities was irregular, sometimes hot and sometimes cold: one day the near fore leg and the off hind leg would be quite cold, and the others warm, and next day it would be just the contrary.

I commenced by abstracting about eight oz. of blood, and then gave the following:—Nitre ʒii, supertartrate of potash ℥iv, tartarized antimony ʒi, digitalis ℈i, flowers of sulph. and liquorice powder, of each ʒiii, aloes ℥i, sulphate of magnesia ℥vi, olive oil ℥iv, and the whole mixed together in warm water, and to be repeated morning and night until the fæces became pultaceous; but this was only given in those cases in which the bowels were constipated.

I then gave twice in the day, in an infusion of good hay, nitre ʒii, tartarized antimony ʒi, digitalis ℈ii, liquorice powder, and supertartrate of potash, of each ʒiii. This was continued until the inflammatory symptoms had subsided, which was usually about the third, fourth, or fifth day; then I gave the following:—supertartrate of potash ʒii, tartarized antimony ʒss, fl. sulph. ℥iii, liquorice powder ʒiv, spirit of nitrous æther ʒii, in chamomile infusion once a-day, with water gruel, &c. horned into them in large quantities.

In those cases in which diarrhœa appeared in the outset of the disease, I gave the following, every eight hours, in infusion of chamomile and hay, till the diarrhœa was stopped:—tartarized antimony ʒi, digitalis ℈i, prepared chalk ʒiii, catechu ʒii, arrow root ℥iss. When the purging stopped, I gave tartarized antimony ℥i, digitalis ℈i, liquorice powder ʒiii, muriatic acid gtt. 60, once a-day in water gruel and infusion of chamomile; vapourous fomentations to the nose, blisters to the larynx, breast, or sides, with rowels, also, as the local determination might indicate, with hand-rubbing, &c. When the cough was very distressing and convulsive, I found it gave way best to blistering the sides with oil of amber, olive oil, oil of turpentine, and powdered cantharides. I have been very fortunate with this mode of treatment. Out of 126 extreme cases, I have only lost four: two of these I was not called in to until the horses had been attended by those "witches of skill," called shoeing-smiths; and the other commenced with symptoms of violent pleuro-pneumonia, which would not give way to any means that I could employ; but these knights of the anvil have lost a great number, nearly every third horse that they have attended, in this neighbourhood.

I attribute the prevalence of this disease to an almost stagnant state of the atmospheric air, together with what little winds we have had being almost exclusively from the east or north-east, of a most foggy, cold, damp kind, and for which these seasons have been so remarkable. This air is received by the inhalents, and other absorbent vessels, when the stomach is empty, and the horse in a state of perspiration. At the same time there is

the irritable and debilitating state under which the system labours at these seasons of the year, whether spring, autumn, or winter, produced by moulting; a process which deranges the whole constitution, and especially when, in autumn, a longer coat must be produced, it must call forth greater and increased powers from the constitution to produce that increase in the length of hair. Then, when the time of changing or moulting begins, and while the process is going on, the capillary and absorbent vessels must be in a state of increased action, for the purpose of supplying that demand, and to form that new growth of hair; while, by long or severe exercise, the lacteals having sucked up all the chyle, and the stomach not having a fresh supply of food to keep up a sufficient quantity of chyle to supply the lacteals, they then begin to take up (together with the other absorbents and inhalents, both external and internal) the air, with all the poisonous principles it may contain (and I think we can perceive it to have, comparatively, similar effects on plants); and this at a time when there is great irritation, and some degree of fever present in the system: the animal being weak, and sweating with little exercise, low and chilly, and thirsty, with impaired appetite. This predisposition in the horse at these seasons to febrile affection, and his being exposed to the cold damp air from the east or north-east, may well be imagined to produce catarrhal fevers, and diseases of the mucous membranes and respiratory organs, of the worst kind.

Under these impressions, I ordered the men who had the care of the healthy horses to supply them often in the stable, or on the road, with a little hay or other provender, and not to let them drink much cold water at a time, and not at all when they were in a state of perspiration; and I have every reason to believe this advice had a good effect in preventing the disease; for I have not found one affected after this method was strictly followed, though they have, in many instances, stood next to a diseased horse. On the contrary, I have observed, that where such or a like plan has not been acted upon, very few, if any, escaped.

Such, indeed, has been the prevalency and destructiveness of the complaint in this district, that very few establishments have been able to continue their works; and this without regard to close, small, large, crowded, ventilated or not ventilated, stables, or situations; but, perhaps, the low damp stables, near large waters, felt it most. It has been the same in the country as in the towns, pervading the whole country round for many miles, and in a very aggravated form, such as I have seldom met with; and also affecting cows (chiefly those that gave milk) in a similar manner. I observed, that if nitre or other strong diuretics

were continued longer than the fourth or fifth day, they did harm, by stopping expectoration and suppuration, and draining the constitution too much, thereby rendering the system too dry, and by that increasing both fever and debility.

[Although we may not quite agree with Mr. Hayes in his theory of catarrhal fever, we thank him for this account of the prevailing epidemic of the last winter. A few of these records would throw much light on a part of our practice at present too little understood.—EDIT.]

ON EMBRYOTOMY.

By the same.

IN unnatural presentations, or disproportions in the size of the fœtal mass, either in mares or cows, that cannot be turned or extracted without great difficulty, or endangering the life of the mother, my method of embryotomy is to draw one of the fore legs out as far as I can; then I make a slit with a knife through the integuments, lengthways, on the shank bone, as high as I can reach. I proceed to separate the skin from the leg, all round, with my hand inside the skin, all the way up, and round the shoulder to the top of the withers, and with my fingers separate the shoulder, scapula, leg, and altogether, from the ribs. All this is very easy to be done, and requires only a few minutes to be effected, and without any instrument. After this I cut off the skin all round the fetlock, at the part where the slit was made, and then draw out the leg and scapula altogether from within the integuments. I proceed the same with the other leg; the head may then be easily got at, and the fœtal mass drawn with the greatest ease, both to the mother and operator.

ON RIGS.

By the same.

As to Mr. Percivall's question of rigs, I know four horses of that description, now in this neighbourhood. Some of them have been castrated of one testicle seven or eight years, and the other testicle has never appeared in any of them. They all have the sexual desires when turned out to grass with or near mares, and will serve mares, to all appearance, the same as an entire horse.

OBSERVATIONS ON DISEASES OF THE HEART OF THE HORSE.

By Mr. Pritchard, *V.S., Wolverhampton.*

It is now my intention to offer some remarks on the several diseases of the heart, to elucidate, in some measure, those cases which have already appeared from my pen in this Journal; and I wish I could do the subject that justice so important a part of equine pathology demands. It is of the greatest importance that we should possess the primary cause of these serious and ultimately destructive changes in the structure of this organ; for, although such information may afford but little assistance to the preventive or curative treatment of these maladies, it is gratifying and satisfactory to be in possession of the whole facts connected with the origin, progress, and termination of these affections.

It has always struck me forcibly that over-exertion is the principal exciting cause of hypertrophy and of dilatation, and, I may add, the possibility that the original structure of the heart may, in some subjects, be unequal in power to the office it is designed to perform. This opinion is strongly supported. Horses, particularly those employed in quick draught, are commonly called on to perform arduous tasks with full stomachs, by which the free action of the lungs is considerable impeded; thus, obstruction being given to the circulation through the pulmonary vessels, corresponding increase of force in the action of the heart is the consequence. Thus viewing the subject, hypertrophy may result to the organ as nature's resort to increase the propelling medium of the circulation, at the sacrifice, injury, and destruction of the more delicate structures in other important organs immediately engaged in life.

Dilatation of the heart's cavities may arise in animals in which the muscular fibre of the organ is easily extensible, and that occasionally are required to perform undue or unprepared-for exertion; thus we may readily account for the right side being more commonly dilated than the left. The first inconvenience felt by the animal in exertion is in the respiratory organs, and this more especially when the stomach is distended, as then the cavity of the chest is diminished; the lungs are not inflated with ease to the extent required for the blood to flow uninterruptedly through them. The free circulation of the blood through the lungs being thus impeded, the heart acts with increased force, to send that fluid through the pulmonary vessels; and, at the same time, contracting on a larger volume of blood, extension of the walls of

the right ventricle takes place; and a frequent repetition of this occurrence may give rise to an increasing dilatation of this cavity.

An obstacle is now offered to the corresponding auricle, and dilatation is the result in this cavity; the right auricle now ceases to admit all the blood sent to it by the veins; these vessels become surcharged; the turgescence extends to the venous radicles, affording an opposing resistance to the arteries terminating in them; a corresponding obstacle is offered in the cavæ to the absorbents: these vessels, like the veins, dilate and become loaded; their tonicity is lost; infiltration of the cellular membrane takes place externally; œdema developes itself in the various organs internally; serous and sanguineous engorgement daily increases; and, should not the structure of some important viscus give way and death rapidly follow the lesion (exemplified in the liver of the mare whose case is narrated in the February No., page 80), this fatal event speedily arrives from the general debility consequent on the loss of absorption: the nutrient supplies daily diminishing, together with the impairment of function in the several viscera, the animal sinks exhausted.

Let us see what takes place when the ventricles are hypertrophied. The blood is sent with greater force into the arteries. Should it be the left ventricle, the coats of the aortic system are strong, and capable of considerable resistance, so as to experience an energetic shock without lesion. By the time the blood arrives at the capillary system, it has lost much of its force; and, by the vessels dividing and subdividing, the impulse is still less felt, so that the capillary circulation continues to possess its ordinary character. That serous cachexy, the result of an hypertrophied state of the left ventricle in the human subject, does not commonly occur in the horse. I have witnessed many cases of its existence to a considerable extent, without any external indications of its presence, after death.

If the right ventricle is hypertrophied, the effect is widely different. Here the blood is pumped with great force into arteries with thin coats, and easily extensible. These arteries are short, so that the shock has lost nothing of its force by the time it arrives at their termination, and which is a net-work of vessels plunging into a delicate vesicular organ. At this point, also, the blood passes into another set of vessels, the pulmonary veins, in which a corresponding power to carry the blood onward is wanting. An obstacle is thus offered to the arterial trunks; and the consequence is, that blood is sent to a part of this capillary system in which, in a healthy state, it did not circulate; or its vessels are multiplied. The forcible contraction of the ven-

tricle causes the coats of these vessels to yield and dilate beyond their power to contract; the blood stagnates in them; rupture of their tunics may take place; congestion may form; or the seriferous arteries commence an increased action, and œdema of the lungs be the result; and which, rapidly extending, speedily suffocates the animal, as clearly displayed in the case of the mare, related at page 26 of the January No. for 1833.

Having briefly described the probable commencement, progress, and termination of hypertrophy and dilatation—a theory deduced from indications during life and examinations after death—the symptoms prognosticating these affections will be more readily conceived. We are liable to confound hypertrophy, and its sequelæ, of the right side of the heart with pneumonia, from the disturbance in the respiration, as it is in the lungs that the secondary lesions occur: I will therefore proceed to describe the symptoms in the last stage of this malady, necessarily fatal, as I previously observed that this is the stage when we are commonly required to make our examination.

I know of no outward signs by which its presence may be detected at an early period, and before fatal lesion in the lungs is fully developed; auscultation, ascertaining the contractions and rythm of the heart, can alone make known its existence. The distinction from the character of these in health can only be recognized by a studious observation of the action of the organ, a practice highly to be recommended. We need no stethoscope, for the ear can be readily applied for this purpose.

By auscultation we are enabled to judge of the alternate *contraction* of the ventricle and auricle; their extent, duration, force, regularity, and simultaneousness; and that both on the right and on the left side.

In listening to the heart's *rythm* (by which is meant the order of contraction of the several cavities, their respective duration, succession, and relation to each other in a healthy horse, whose heart is in a state favourable to the performance of all its functions), we first hear that of the ventricle, a somewhat long dull sound; and immediately following, and without interval, a louder and shorter sound, which is that of the auricle. Then comes a perfect repose. Of the whole period occupied by a complete contraction and repose of the heart, about one-third is taken up by the ventricles, a fourth by the auricles, the rest by the absolute repose: and when the organ is healthy and properly proportioned, these relations exist, whether the contractions are quick or slow. When we come to study the changes from these movements of the healthy organ, movements which must be heard to be known, no language being capable of conveying a just idea of their character, and compare the phenomena with

the post-mortem appearances, efficient and unerring signs are afforded to guide us safely in our prognostications of these diseased states of the heart.

I know auscultation is looked on by many practitioners, both in human and veterinary medicine, as affording little information in diseases of the chest, and I was ignorant enough of its importance, at one time, to be of that opinion; but, from persevering in that mode of inquiry, I have now the gratification of being capable of detecting the nature and extent of some diseases in the thorax that heretofore I was unable to recognize.

To return, however, to my subject: I observed that hypertrophy of the right side of the heart was liable to be confounded with pneumonia, as the lungs are readily affected in this case; but there is this obvious difference—the breathing, although quickened and laborious, is less frequent than in pneumonia; the pulse, notwithstanding it is quick and intermittent, is not so much oppressed; the submaxillary artery is more dilated; the flow of blood through the jugular is more current; the membranes of the eye and nostril are less injected; the surface of the body and extremities are of a moderate warmth; and these last symptoms are present when the respiration is exceedingly difficult and laborious: copious bleeding does not cause that change in the character of the pulse; nor afford comparative relief to the respiration; both lungs are equally affected; the respiratory murmur is indistinct, and marked at all points of the chest; and the urgent symptoms experience no remission: it is serous infiltration of the parenchyma of the viscus which puts all remedial measures at defiance.

[To be continued.]

ON THE STOMACHS OF RUMINANTS,

AND PARTICULARLY ON THE QUESTION, WHETHER, AND UNDER WHAT CIRCUMSTANCES, FLUIDS ARE RECEIVED INTO THE RUMEN.

By Mr. FRIEND, *V.S. Walsall.*

To the Editors of "The Veterinarian."

Gentlemen,

WILL you allow a stranger to congratulate you on the increasing interest of the new series of your valuable publication, THE VETERINARIAN. I am sorry to confess, that I have been a reader of that work only during the past year; but am happy to acknowledge, that the perusal of your monthly numbers, during that period, has afforded me both interest and information; and since the number for February has come to hand, I have been forcibly struck with the propriety of more members of the

veterinary profession coming forward to your aid, in a cause which has for its end the advancement of veterinary science in all its departments. With this feeling, I forward you the following remarks; and if, haply, I may add one grain of information to the present stock of veterinary knowledge, or be the means of stimulating some one with more scientific acquirements, or more favourable opportunities, to pursue the subject further, my aim will be accomplished.

In looking over the few numbers I have by me, with a view of fixing on some subject on which to address you, I could not but notice the dearth of physiological and pathological facts respecting neat cattle, and other ruminant animals. I the more regret this, as it is an acknowledged fact, that *the education of veterinary surgeons has hitherto been most lamentably deficient in this branch of veterinary science;* and as it is equally a fact, that be the observations of any one man ever so acute, be his researches ever so deep, and his opportunities of acquiring information ever so extended, yet, without communication, the result of all these cannot benefit others; so, by parity of reasoning, neither can he himself, without communication, benefit by the industry and researches of his professional brethren. Now, as there is no other medium in the veterinary world through which we can publicly contribute our stores of information, for the mutual benefit of the profession, than the work edited by you, I am determined, for one (provided you will register my deposit), to place a small stock in your savings' bank of veterinary knowledge, from which I know I can at all times receive "mine own with usury."

Perhaps there is no part of the animal economy less thoroughly understood than the digestive organs of cattle. The general structure and supposed uses of the four stomachs of oxen, for instance, is familiar to every one of us; but there are certain peculiarities connected with their organization, in the different states of health and disease, a minute acquaintance with which appears to me to be essentially necessary to the practitioner whose sole aim is directed to the well-being of the animal.

There is no doubt but that the internal economy and arrangement of parts in every animal is best adapted for the good of that animal; and in a perfectly natural state I am persuaded that cattle suffer but few evils from the peculiar conformation of their stomachs; but in the partly natural, partly artificial state in which they are now kept, it is notorious that they do suffer much and frequently from indigestion.

In looking over the few cases that are detailed in the several numbers of The Veterinarian for 1832, I find scarcely one

that is not referrible to this cause; and the methods of treatment for which have not been directed to the removal of it. I will refer you, if you please, to one case in the number for March last, detailed by Mr. R. Sumner, on which case he founds a question involving circumstances of considerable importance to the practitioner, and which question was answered by you in the editorial article for that month. In this case I infer, from what Mr. S. says in the latter clause of his question, that he supposed the seat of disease to exist in the first, second, and third, stomachs principally; and I have no doubt that he was quite right in supposing so. In almost all cases of puerperal fever, and where cows are down after calving, these viscera are considerably affected; and I am of opinion, that by far a greater number of cases of this kind are produced by the quantity or quality of the food taken immediately preceding the attack, than from any other cause.

I have seen numbers of cases, where cows (doing perfectly well after calving) being allowed to go into too luxuriant pastures, or otherwise to feed unrestrained, have fallen, and have at once exhibited all the painful symptoms attending the worst states of puerperal fever; and some where death, in despite of all assistance, has supervened. There is the distressing moaning, the drooping ears, the dreadfully dejected countenance, the eye sunken and lustreless, the head thrown back, as if it were an index to point out the seat of pain and disease, the extremities cold, and the animal altogether displaying such a picture of pitiable wretchedness as must be seen to be understood: and all this, at times, in the absence of such a state of inflammatory action as to render it matter of extreme surprise to those who have not seen much of it, and the cure of which is sometimes perfectly effected by powerfully evacuating the stomachs and intestines.

There is, generally speaking, an unhealthy discharge from the uterus; and I consider that this is the part primarily affected, that this affection extends by sympathy to the digestive viscera of the abdomen, and that the most dangerous portions of the viscera are the first, second, and third stomachs, because we can most certainly give medicine to act upon the abomasum and intestines, while the certainty of affecting the first three is to me rather problematical, for reasons which I will explain hereafter. My practice has always been directed to clearing the stomachs, at all events; and I have found, where I could do this effectually, I have most commonly succeeded in saving the animal: and I have scarcely ever (in fact, I cannot recollect a single instance) had a post-mortem examination, that has not exhibited

the paunch distended with a half-chewed mass, and the manyplus also filled with masses which could hardly be improved (if drying it were an object) by the oven. In all cases exhibiting these symptoms, whether after calving or not, we must not rest till we are assured that we have succeeded in emptying all the stomachs; if we stop short of this, the animal is lost.

I the more insist upon this, as I have been deceived myself (and I doubt not but others will recognize the delusion) by purgation coming on, and giving evident signs of the medicine having gone through the animal, when an examination after death has proved, as in the case detailed by Mr. Sumner, that the outworks alone had been forced, that the citadel had not surrendered; that our artillery had passed harmlessly by it, and that death had taken place in consequence of our want of power over the first, second, and third stomachs.

This leads me to make a few remarks on your article before alluded to; just premising, that there is a case stated in the number for September, by Mr. E. Drake, evidently one of indigestion, and the speedy cure of which immediately raised the animal on her legs. In making these remarks, I feel assured you will be candid enough to excuse any difference of opinion that may exist between us, believing, most sincerely, that every endeavour to discover truth will meet with your cordial approbation, even though it may militate against any pre-conceived opinion of your own.

After beautifully describing the passage of the food to the first stomach, the structure of the passage, &c., the re-ascent of the food along the esophagean canal, and its return after rumination, you proceed to say, that "when the fluid part of the aliment glides down the esophagus, the momentum is not sufficient to separate the fleshy pillars at the bottom; and that, consequently, the liquid flows on through the manyplus, and into the abomasum; and that this accounts for the circumstance mentioned by Mr. Sumner, in effect,—that his medicine had not entered the first and second stomachs, but had at once gone on to the fourth."

Now, if the premises had been correct, this conclusion would have been just also; but I dispute them. After meeting with cases of the kind described by Mr. Sumner, I was at a loss how to account for the circumstance, that the medicines which I had found successful in one case, had failed altogether in a similar one; and, after finding that the cause of disease existed in one stomach, and that my medicine had found its way into another, it occurred to me, in despite of the opinion of others, that either my former practice had been to no purpose, and that nature had

relieved herself in my successful cases, or that the medicine being found in the fourth stomach of those that died was not a purely natural result, but rather the effect of accident, arising from the state of the other stomachs.

Now, as there had been circumstances attending divers cases of this kind that made me dispute the probability of the first, I naturally adopted the second alternative; and, the better to assure myself of this, I pursued the following plan:—I procured leave from a butcher to administer linseed and water to various ruminant animals just before they were to be killed, and then examined their stomachs directly after; and the result was as I expected—that the greater portion of fluids find their way at once into the rumen, and that instead of its being, as you state, the result of something like accident that fluid is found in the rumen at all, it is rather in consequence of this that any material quantity passes the rumen by the continuous passage to the other stomach.

I have no doubt that the bulk of all fluids taken by the animal in a state of health enters the rumen directly, and as it is not at all necessary that they should re-ascend the esophagus, they again flow off by the passage to the abomasum, taking with them all such portions of the food as are sufficiently comminuted to proceed to immediate digestion. In fact, this is the course taken by the food itself, under certain circumstances I shall explain presently.

You have stated as your opinion, that the reason the food does not, after rumination, a second time find its way into the rumen, is owing to the circumstance that the gullet cannot act so strongly on this pultaceous mass as it did before. Surely, there is not that difference between the mass a second time going down the gullet when the cow lives on coarse strong hay or straw, for instance, and the first time when the cow lives on fine (say short) meadow grass, or is eating grains or bran-mashes, &c. as to make this of any consequence, mechanically considered.

Now, it strikes me, that we are to look for the difference in the muscular action and firmer opposition of the fleshy pillars, rather than to the action of the reticulum beneath. I am persuaded that this stomach, in preparing another pellet to ascend the gullet, rejects the descent of the ruminated one, and becomes a strong stimulus to the two muscular bodies that guard the entrance to the rumen; and obliges the descending pellet to pass on to the third stomach.

Perhaps this may be better understood by my stating, that the base of the canal which is formed by the esophagus with the two muscular bands, when viewed from the under side, presents

the resemblance of a button-hole; the termination of the esophagus corresponding to the hole made for the shank of the button, with its three-parts sphincter-like appearance; and the two muscular pillars to the two sides of the same, the stitches of which present you with a fair likeness of the muscular formation of the said bands. This termination of the gullet is fixed, as nearly as possible, above the ridge of partition of the two stomachs, so as properly to act for both. The external muscular construction of the second stomach, you will recollect, is similar to that of the scrotum, accumulating in power towards the base, and admirably adapted to the purpose of forming and propelling a portion of its contents upwards. Now, when this power is called into action, if the portion of its contents supposed to be moved be presented at that three-parts rounded portion of the canal which terminates the esophagus, the consequence is, it is seized by that organ, which appears to have the power of forcing it upwards, and thus taken to the mouth for rumination; but if any portion of the contents of the said stomach be forced out between the two longitudinal bands, it then comes into the true passage to the third stomach.

On something like this principle I account for medicine being at times rejected by the first stomach. There appears to be a state when the stomach is overloaded, and rumination ceases; that the power to draw together the two muscular pillars is unconsciously put into action, and the consequence appears to be, the flowing on of the fluid given into the last stomach.

In most cases, after death the contents of the first stomach will be found to contain, comparatively, but a small quantity of fluid, while that of the abomasum, or true stomach, will be found to be nearly in a liquid state; and from this cause, coupled with the fact, that medicines have been frequently found in the fourth stomach, that had appeared never to have entered the two first, has arisen the idea. I have no doubt that this is the natural course of fluids taken in by ruminant animals. But whoever will take the trouble to administer a fluid to them (in a state of health), mixed with something by which he can ascertain its exact direction, will find that the bulk of the quantity given will fall into the rumen, though the other stomachs will generally contain a proportion of the same. This clearly shews, that whoever would efficiently pry into the secrets of nature must not rest satisfied with examining her alone in the untoward state of disease, but also in health, when all her faculties act with vigor and precision.

By the way, I would recommend the adoption of linseed gruel, as a vehicle in which to administer most medicines given to

cattle, both because it is most admirably adapted for the purpose, and also because the seeds which it contains are a valuable means for ascertaining the course of your medicine in case of death; and, surely, the interests of science must be advanced by this certainty, and the practitioner warned, or doubly satisfied with his previous practice. From some other remarks made in the article alluded to, I come to the conclusion, that it was hastily written. There are some inferences drawn from positions laid down that do not, in my opinion, at all accord with the anatomical acquaintance with the structure of the parts, so beautifully displayed in the description given; and I have thought that Mr. Sumner must have felt rather bewildered, when he found something like a sarcastic reflection, coming from such high authority, on the very natural idea he had entertained of directing the medicine into the stomach in which was the seat of disease, on the ground that there was a danger of mixing a nauseating drug with the food that had still to be returned to the mouth to be chewed afresh. Surely you had forgotten, that chewing the cud, in all cases like that described by Mr. S., is entirely out of the question; and that, except the stomach could be relieved, either by its own natural power, or by the stimulus of medicine, rumination would cease, and for ever.

I come now to the proof of what I have before hinted at; viz. that the food under certain circumstances does not repass the gullet, but goes directly forward to the third stomach. In cases like those we have been contemplating, this is decidedly the case. Every one knows that the first act of the animal that survives an attack of this kind (so far as food is concerned) is to eat; and that rumination does not always immediately follow this, but that the animal will eat for some length of time before he begins to chew the cud. Although eating is, itself, an uncertain symptom, yet, when we hear of it under these circumstances we hail it as the sure sign of returning health. Now, where the stomach has been previously distended beyond its tone, it would not allow of an augmentation in the quantity without adding evil to evil, except there were some means of getting rid of the incumbrance beyond that of rumination, which has not taken place during the time we are supposing. Again, in cases of cattle gorging themselves when in health, from being turned into a too luxuriant pasture, &c.; if it were not possible to unload the stomach except by the ordinary course of rumination, the animal would be in these cases invariably lost. These may be said to be partly accidental states of the body; but I am of opinion, from observations I have made on the rumination of

cows, that, at grass particularly, a very great portion of the food never returns by the esophagus, but passes directly forward; and that the second stomach has the power of separating such parts as are sufficiently chewed from those which are not, and of directing them on their separate destinations, a circumstance no more incompatible with reason than the fact of at all separating the contents of the stomach into pellets, for the purpose of rumination.

From what I have ascertained on this subject, I would infer, that it is absolutely necessary to send the medicine given into the rumen; that the ordinary means of giving it is not always sufficient for this purpose; and that death is not unfrequently the consequence of this failure. And I would most respectfully request any veterinary surgeon who may have the opportunity, to turn his attention to the subject, that, if possible, a decidedly certain, and the best means of administering medicine so as to enter the first stomach under any circumstances, may be communicated to the profession generally through the medium of your pages.

I am persuaded that experiments similar to those I have mentioned might be instituted, so as to add considerably to our acquaintance with the economy of ruminant animals; and I earnestly hope to hear of such being carried into effect, and to an extent that may ensure perfect conviction. I offer these observations as introductory to better matter, and by no means conclusive; but with a hope to benefit myself by the exertions of others, to which they may possibly give rise.

I offer no apology to you in sending these desultory and unconnected remarks in their native wildness of growth; knowing that the axe and the pruning-knife are both in your possession. But I offer you instead, free leave to make use of either.

Mr. Friend might be assured that neither the axe nor the pruning-knife would be applied to a production like this. The editor on whose physiology of the stomachs of cattle he animadverts, cordially thanks him for this communication; and will gladly, and with perfect good-feeling, meet him on this ground in the next VETERINARIAN, the present one being too full.

Hic patet ingeniis campus: certusque merenti
Stat favor: ornatur propriis industria donis.

Y.

THE VETERINARIAN, APRIL 1, 1833.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

ON CHOLERA IN DOMESTICATED ANIMALS.

The dire pestilence which, a year ago, threatened to desolate our island, has happily now left us, and is, therefore, possibly, a subject of less interest than it once was: but it went as it came; and notwithstanding the unwearied investigations of the most talented of our countrymen in the practice of medicine, the nature of the disease is still comparatively unknown. The following account of the observations and practice of one of us, at Edinburgh, on this dreadful malady, may throw some light on the subject, so far as it regards our patients; and, as it is a subject new to veterinary science, we adopt it as our leading article. It will be convenient for the writer to speak in his own person.

When the disease first made its appearance in Britain, I, in common with others, was naturally anxious to ascertain its progress. As it approached the northern metropolis my interest in the inquiry increased. The descriptions given of the malady were vague, and I therefore wished to see a case in the human being, that I might compare it with that which I conceived to be the same, or an analogous disease, in the quadruped. This I at length accidentally had the opportunity of doing; but it afforded me little satisfaction. In a few days afterwards, however, I was enabled to observe the morbid appearances of cholera in a person who had died of that disease; and I had also the satisfaction of hearing a clinical lecture on the subject by Dr. Macintosh. In a conversation after the lecture, I was induced to offer some remarks concerning what I had observed of this malady among horses and cattle. This led to the suggestion of my stating my opinion to Dr. M.'s class, which I promised to do if another case occurred in my practice, the morbid appearances of which would enable me to illustrate my views.

On the day following this conversation, a cow was seized with the disease, and died in eight hours. On dissection, the post-mortem appearances were so perfectly similar to those of the human being, that, on shewing them to Dr. M., he expressed a

wish that the parts should be exhibited to the class on the following day; and that I would offer what remarks I thought proper regarding them and the nature of the malady. I somewhat reluctantly consented to this; but the want of time for preparation, and the impossibility of providing myself with sufficient notes on the subject, compelled me to give a less particular statement than I could have wished. I was, therefore, obliged to content myself with the following observations, which, a few days afterwards, were reduced to writing, in consequence of a request from the Medical Members of the Board of Health, with the view of being published in connexion with numerous facts which they had collected; but which intention, on account of the immense number of publications that appeared upon the subject, was abandoned. As, however, they are drawn up, they may not inappropriately be recorded in THE VETERINARIAN. The reader will remember, that this paper was written in, and principally refers to, the spring of 1832.

If I am correct in the analogy that exists between the disease which I have observed amongst the most important of our domesticated animals and that which affected man, a new view of it is forced upon our notice; and one which, if *general* (veterinary) medicine were cultivated with the care it deserves, would lead the physicians to many useful conclusions which *particular* (human) medicine does not afford him. I offer this remark, because some medical writers have laughed at the idea of a horse having cholera; supposing that we had mistaken bots for it, or I know not what; or that we had strangely confounded a cow that was hoven with one affected with this disease—triumphantly but disgracefully proclaiming their own ignorance of general pathology. They forgot, or rather they did not know, that the horse is almost entirely precluded from exhibiting one of the common symptoms of cholera by the mechanical construction and situation of his stomach preventing him from vomiting; and that, from a similar cause, ruminating animals neither do nor can exhibit all the symptoms of this disease. Had these medical men who would thus try to laugh us out of our opinion, set themselves to discover the true nature of the malady, instead of expending their ingenuity in the pursuit of contagion, they might have come to more liberal conclusions: or had they stated what was the *true pathological condition* of a cholera patient, we could then have better compared notes with them.

In order clearly to illustrate what I have to advance regarding the disease, I think it proper to take a survey of the state of health of our domestic animals, as I found it for some time prior to the present epidemic.

Early in 1830, an epizootic disease commenced, by which, for some weeks, several horses in Edinburgh and its neighbourhood were affected; but until the beginning of June it had not become very serious. During the latter part of that month, and throughout the two following ones, however, it became more formidable, and a great number of horses were seized with this affection.

The disease appeared to consist in an inflammation of the mucous membrane of the organs of respiration; the pulse rose to a range of from sixty to ninety, according to the severity of the case: there was slight soreness of the throat, weak cough, breathing quickened; the animal heavy, with great weakness, and that rapidly ensuing; *bowels easily acted upon;* surface of the body natural in temperature, but with a more than ordinary tendency to get *cold in the extremities.* The disease was, however, by no means fatal, so that in one establishment (Mr. Piper's, mail-coach contractor), out of thirty-two horses seized with this disease, only three died; and other proprietors were, at that time, equally fortunate. The treatment in these cases was bleeding; a dose of mild laxative medicine; and blisters applied to the sides. The preparations of antimony and nitre, as alteratives, were given during the inflammatory stage of the disease, and those of iron and gentian as tonics, to restore the strength when that had subsided.

Some mild weather setting in during two months in Autumn, the disease almost entirely disappeared; but as the weather afterwards changed to wet, with the wind blowing from the east, the disease commenced a most destructive career, and spread over the neighbouring country, more especially East and Mid Lothian. It was not confined to these districts alone; neither were horses entirely the subjects of the disease; both cattle and sheep had suffered throughout the whole of this season, so that it has been calculated, that of sheep 2,000,000 died of the rot during that year*.

By a reference to my case-book, I find that it commenced again about the end of October, and increased in severity throughout the months of December, January, and February; during which time upwards of one hundred and fifty cases occurred in my practice, of which about thirty died, giving striking proof of the severity of this serious epizootic.

In the beginning of January, 1831, I had an opportunity of knowing that cattle had been extremely affected, because I was requested by the Right Honourable Viscount Arbuthnot to visit

* Library of Useful Knowledge.

the stock of one of his lordship's farmers, near Bervie, with a view to ascertain the cause of a disease which prevailed there, and of which forty-three beasts had died during the season. The animals which I saw were affected in a way precisely similar to the horses in this part of the country, and which was described by the farmers as a *closing*, from the difficulty of breathing occasioned by the inflammation of the larynx and mucous membrane of the bronchi.

In all the cases the symptoms presented a close resemblance. The pulse ranging from seventy to ninety, in many cases irregular, in some rather small and oppressed, and with a degree of feebleness; while in a few others it was hard and bounding. In the early form of the disease, the respiration was rather confined than oppressed, and was marked more by contraction of the abdominal muscles and drawing up of the flanks than by increase in the frequency or extent of their action. The respiratory murmur, when the ear was applied to the throat and sides, indicated a morbid secretion of mucus in the air-tubes, which could always be heard while they remained pervious. There was commonly sore throat and some cough; but the cough was not considerable; or, when it became so, was symptomatic of returning health and strength. The mouth, generally, was hot but moist, and rather filled with mucus: when otherwise, the tongue was foul, with a crust upon it, and the breath had a cadaverous smell. The strength soon became prostrated. The bowels were, in general, very easily acted upon, and a good deal of caution was necessary in the administration of laxative medicine, as the over-excitement of the bowels had a strong tendency to increase the fatal termination of this disease.

Examination after death shewed the malady to be an inflammation of the bronchial membrane, especially in the minutest portions of the air-tubes; terminating in the formation, first of tubercle-like masses in the substance of the lungs, and which afterwards rapidly burst into abscesses, forming innumerable vomicæ, more especially towards the lower edges of the lobes of the lungs, or in the small lobes or portions anterior to the heart. A minute inspection seemed to indicate an interruption to the blood in the minute vessels as it was passing through the lungs from the right to the left side of the heart, and which, where it became obstructed by the morbid obliteration of the vessels, was coagulated and broken down, and aided in the formation of the tubercles and the abscesses. In these respects the epizootic differed from that which occurred six or eight months before, because in the animals which died at that period, there was only simple inflammation, with hepatization of portions of the lungs, but without the tuberculous formations.

The disease, in a great measure, subsided in the autumn; but as the weather became colder it once more appeared: it frequently, however, differed in some respects from the former, for while it partook of the general nature of the affection, it now seemed in the commencement of its attacks to be more directed to the mucous membrane of the larynx: it was also more frequently than before ushered into notice by a shivering fit, during which, and as the hot stage commenced, the mucous membrane of the intestines was also in some degree affected, and which was indicated by colic pains, and the continuation of the same degree of susceptibility of being acted upon which appeared throughout the whole course of the epizootic, and even now is frequently observed.

In the beginning of November, a farm horse, belonging to Mr. Carstairs, Penicuik Muir, died of an obstinate diarrhœa; and towards the end of November and beginning of December, diseases of the bowels became more frequent than for some years past.

On the 7th of December my attention was more especially excited by a horse belonging to Mr. M'Callum, Plowlands, which was seized on the previous night with sudden illness, attended with purging. He had had moderate work on the preceding day; his food, drink, and exercise had not been altered, except that in the morning, at five A.M., boiled barley and chaff and bran mixed had been given to him; and he had stood for some time in a shed that day, while the cart was repaired.

About four o'clock on the morning of the 7th, however, he was observed to be very ill, with symptoms of colic, *purging violently*, extremely fidgetty, and evidently in great pain. His owner was called up, who endeavoured to bleed him, and sent for me about six A.M.; but as I had been engaged during the previous night with a case until after three o'clock, I requested Mr. Cheetham to attend him, who found him, when he arrived, about seven A.M., in articulo mortis. The person who had been in the habit of driving him stated, that on the 3d, 4th, and 5th of the month the horse had been purging slightly, but that these symptoms had disappeared on the day previous to his being taken so ill, and that he was then considered to be much better.

After death he was conveyed to one of the fields, during which process, immense quantities of watery fæces escaped per anum, with a most intolerable stench.

The body was immediately opened. The abdominal viscera presented little appearance of disease; the stomach was about two-thirds filled with food, but offered no particular morbid appearance. The mesenteric veins were turgid with black blood;

the villous coat of the colon had an inflamed appearance, but not well marked; the small intestines contained a yellowish-like mucous fluid, while the large intestines had within them a dark blue, clay-like, thin fluid, with a most disagreeable odour. The bladder was contracted and empty. The lungs were pale, and rather of a healthy appearance; and the ventricles and auricles of the heart were empty of blood. The brain was not examined.

During the same week, and within half a mile of the same place, a case of diarrhœa also occurred. A fine young brown mare, belonging to Mr. Porteous, at Morningside, was attacked with a severe purging, for which a dose of oil was first given, and afterwards an astringent, composed of ʒi opium and ℥i cretæ præparat., and which in some measure had the desired effect; but, two days afterwards she was again brought back, the disease having returned rather suddenly. It was again stopped by astringents, but she was attacked a third time, after the lapse of two or three days, and was once more brought to my infirmary: and more astringent medicine was given, which succeeded in finally removing the complaint.

After this a more than ordinary number of cases of diseases of the bowels made their appearance, the greater number of the subjects of which were old horses, belonging to coal carters: but I have no particular account of them, as they are a sort of dispensary patients. One, however, which occurred about four weeks ago, was of such a peculiar character as to deserve particular notice. He belonged to a person at Rosebank, of the name of Telford, and had shewn, during the night, symptoms of colic. He was brought to me in the morning: his pulse was irregular, but not increased in frequency; he had not fed in the morning; and he shewed no symptoms of uneasiness while with me. He had had an attack of bronchitis about twelve months previously. There was a want of the respiratory murmur in the lower part of the chest, from which, with the irregularity of the pulse, and the circumstance of his having had disease of the lungs before, I was led to suspect either a slight effusion into the chest, or chronic inflammation and hepatization. Sulphat. ferri ʒij, et camph. ʒi made into a ball with linseed meal, was given. He was not brought back until two days had passed, as he had been less uneasy; but then I found that during the preceding night he had had severe colic pains, and had been purging from the commencement. His pulse was still irregular, but with some strength; and I therefore bled him, and gave a laxative of aloes ℥ss, by which the purging for the following day was greatly increased, but on the second day he was so much recovered that he was put to work, and got quite well.

Although the poorer and worst fed animals were most affected, those which were in better keeping were not altogether exempted. One gentleman has lost two very valuable horses within the last two months from tympanitis. They were suddenly seized with colic pains, which rapidly increased. They swelled from decomposition or fermentation taking place in the contents of the viscera, and by which the intestines were ruptured, and death inevitably produced. The last of these had been observed to purge a good deal before the pain came on: he had been chiefly fed on hay and oats.

Mr. Hill, at Saughton, had two cases within a week, one of which, a strong cart-horse, had his bowels opened to excess for two days by ℥ss aloes. Indeed, for the first two weeks of February, not a day passed without one or two cases of diseased bowels occurring in my practice. On two days there were three cases; and on two others there were five cases in each day.

On the 18th, a black horse, belonging to Mr. Lawrie, Coltbridge, was brought, the driver complaining that he seemed ill and wished to lie down in the street. He was bled, and aloes ʒss given, which purged him for two days; but I afterwards learned from the owner that for eight days previously he had been purging, and that all kinds of food had been tried with the view of stopping it, but without effect. After he was bled, however, and the effects of the ball had gone off, he became quite well.

For the next two weeks there were but three cases each week. One of these, a mare belonging to a celebrated surgeon, had diarrhœa for four days; this, however, may be, in some measure, accounted for, because she had had a severe day's hunting, and was observed to be purging before setting out. Another was a poor cart horse, taken ill in the street with colicky pains and purging. It was bled, and a laxative of aloes ʒiij, and opium ʒj, given; and I heard no more about him.

The hunting mare was bled, and had aloes ʒijj., with a large allowance of oatmeal and starch gruel. She had an intolerable thirst. The fæces were remarkably thin, and, for two days, of a blue clayey appearance, frothy, with a most nauseous smell. On the 5th day the disease began to subside, and on the 6th she was feeding heartily, and, with the exception of being considerably reduced in strength and condition, seemed quite well.

But not only have diseases of the bowels prevailed amongst horses, but I have had also, within the last four weeks, more cases of the same affection in cows than for as many months before. One cow, belonging to Mr. Lauchlan McPherson, of Broughton, was seized on the afternoon of the 18th of February. She had

not eaten her mid-day feed, and scarcely gave her full quantity of milk, and her bowels were observed to be more open than usual. At four P.M. she was found to be worse. She had lain down, and was unable to rise, and was purging violently.

I was requested to see her about eight P.M., and found her lying in a dirty wet stall; her extremities, horns, and ears cold; and a fineness about her legs which indicated a want of the natural circulation in them. Her pulse, which in health should have been about sixty, was now ninety. She tossed her head from side to side with an inexpressible anxiety; her legs were generally extended with a convulsive tremor; her jaws chattered, and her eyes were extremely dull and languid.

She was bled to five quarts: sixteen ounces of castor oil were given, and hot fomentations applied to her belly; clysters of warm water and soap were injected; and plenty of straw placed about her, to make her as comfortable as possible. She seemed somewhat relieved for a little while, but she ultimately relapsed, and died about twelve P.M.

On examination after death, it was found that the fourth stomach, and the greater part of the intestinal tube, presented more or less degree of increased vascularity of the mucous coat, more especially that of the smaller intestines; in many places it was highly injected, and there were some spots of ecchymosis. Various portions of the intestines contained fluids of different colours; where the bloodvessels were most injected there was a bloody-like mucous fluid; where the membrane was less affected a fluid resembling dull cream was found; while in the larger intestines the whole contents were of a peculiar blue clayey-like appearance. The lungs were congested with black blood, and the veins of the brain and spinal chord were fuller than usual. The membrane lining the bronchial tubes, especially in one lobe, presented a considerably increased vascularity.

In the Caledonian dairy, twelve cows were attacked in one week, of which three died; and in these the post-mortem appearances were very similar to those exhibited in M'Pherson's cow, with the exception, that in one of them there was a considerable quantity of water in the bladder.

As the overseer has given a pretty good description of the symptoms of one of the cases, I beg to refer to his letter:—

Meadowbank, March 30th, 1832.

Dear Sir,

"Another cow was taken ill at half past one o'clock, and being present at the time, I had a full opportunity of observing every particular with regard to the attack and the symptoms.

The attack was sudden—in a moment. The first appearance was a cramp in the hind legs: she seemed to suffer acute pain, particularly in one leg; her eye of a wild, staring, and terrified appearance, as if sensible of the pain she had to suffer; her extremities stiff and cold; a singular quivering on the shoulder and thigh—a finger or thumb would have covered each part. I was particular in following your directions as to the treatment, which in the end had a decided effect. By first taking a large quantity of blood—a severe trembling took place—the same quantity of oil given as the others, and several bottles of hot water—two or three clysters given—frictioned with dry hard straw, till a proper heat was produced, and rolled in woollen cloths. I have not used fomentation, as in cases when the disease had got a greater length: she seems somewhat better at present; but would wish you to come this length to-night, if in your power."

He has, however, omitted some particulars, inasmuch as he does not mention that they were all affected, more or less, with purging; and in some of them coagulated lymph formed a great portion of what was discharged. In some, the purging appeared first; in others, the cramps of the legs. It is here proper to observe, that a change of feeding had been introduced into the byre about eight or ten days before the disease broke out. In consequence of the scarcity of Swedish turnips, potatoes had been substituted, and to this cause the disease might have been attributed; but in other cases this cause was not so apparent. The cows that were attacked were standing in various parts of the byre.

In a cow belonging to a gentleman, which I saw just as she was dying, there was a great degree of blueness about the muzzle, which was strongly contrasted with the natural whiteness of the part.

I may further remark, although it does not bear directly upon the subject before us, that within the last few months I had observed some cases of erythematous disease, which is rather a rare affection in the horse:—First, a mare, belonging to Mr. Cunningham, of Culross, was suddenly affected with an eruption over the whole body, strongly resembling nettle-rash in the human being, attended with dulness, loss of appetite, slight soreness of the throat, mouth moist, pulse soft, and little increased; being only 50; these swellings on the surface of the body almost entirely disappearing in about twenty-four hours. She was observed by the hostler to be cold and uneasy about noon for two days afterwards; and on the third day, in consequence of my having desired him carefully to watch her, a slight shivering was observed from twelve at noon till about one P.M. Considerable weakness

and loss of flesh followed, from which she required several weeks to recover.

A chesnut horse belonging to David Cathcart, Esq., was seized in the same manner with a rash over his whole body, his eyelids nearly closed, and his lips so much swelled, that he could scarcely feed; the whole, however, was quite gone next day. He was bled to six quarts; and a dose of laxative medicine was given, with soft food.

In about three weeks afterwards, a year-old filly, belonging to the same gentleman, and kept in a loose box immediately adjoining, was affected in the same manner. A gentle dose of laxative medicine was given, and she was bled to nearly two quarts, which produced syncope, but from which she immediately recovered. The swellings, however, did not entirely disappear for two days.

In neither of these cases was the pulse much altered; and nothing like the shiverings was observed in the two last: in the one case, bleeding appeared to be of service; in the other, I think not.

Within these four weeks, two cases of another rare affection have occurred. One is that of a horse that was seized in the street with what was supposed to be colic. There were symptoms of considerable pain; and he tossed himself about for a short time; but, after being bled, and a large enema of soap and warm water being injected, he became quiet, and passed a quantity of urine highly tinged with blood. As he seemed, two or three hours afterwards to be much recovered, he was sent home; but he became worse on the road, and was exceedingly lame, which, from the description of his symptoms, I am disposed to consider as arising from spasm, as I found the lameness gone in about an hour afterwards.

In the ensuing week I was sent for to see a mare about three miles from town, which was attacked in a similar manner. She was quite well, and playful, when the owner (a farmer, near Sclateford) left home; but he had not gone two miles, when he found her very ill. She had leaped a small fence soon after going out; and the owner stated that, unless that was the cause, he knew of no other. When I saw her, the pulse was 80, and weak: she had been bled freely, and was considerably better, but was still uneasy, and she had passed a quantity of urine red with blood. On leading her out of the stable, she straddled with her hind legs; and they were, at the same time, curiously flexed, as if from spasm of the perforatus muscle. I ordered fomentations to her loins, and a dose of laxative medicine, and left her. In about an hour after I had gone, a spasmodic twitching of the diaphragm,

and the muscles of the loins and quarters, took place, which lasted for some time. Next day she was much better, and in a week was as well as ever.

Upon these two cases, however, I do not intend to found any particular remarks, as the symptoms may have arisen from some accidental injury: if that was not the case, they shew what I have wished to impress, a tendency to disease in all the mucous membranes.

From what has been stated, it will, I think, appear pretty evident that there has existed, for about these twenty-two months past, an epizootic affection of the mucous membranes, especially in the horse; and it must also appear, that that affection has offered some peculiarities in its character, which deserve attention. While, in the commencement, it was clearly an affection of the mucous membrane of the respiratory organs, there was, at the same time, a more than ordinary degree of excitability of the mucous membrane of the intestines, and which was indicated by the violent effects which small doses of medicines produced upon them. This irritability of the membranes has continued even until the present time. While, however, the malady seems to be but little altered since its first appearance, there has been, as will be observed from what I have stated, a still greater determination of disease to the mucous membrane of the intestines than at its commencement. The latter form of the affection is the more remarkable, because, while the horse is sufficiently liable to diarrhœa from over-exertion, in combination with bad food or improper feeding or being allowed too much water prior to this severe work, he is, at the same time, so little subject to diarrhœa while at rest, or under proper diet and exercise, that I have been for years without meeting with a case. When that is compared with the occurrence of so many as I have enumerated, and taking place in so short a period, and under the present peculiar circumstances, I feel compelled to come to the conclusion, that the same causes which have been operating upon the human being, have also been affecting the lower animals; and it may, therefore, not be improper that I should offer my opinion regarding the identity of the disease in man and in brutes.

Soon after the appearance of the cholera in Musselburgh, I had occasion to make a visit at Preston Pans; and, on my return home, in coming through Musselburgh, I happened to be passing just as some medical gentlemen came out from visiting a case; and I was informed by one of them, whom I chanced to know, that I might see it, if I chose. I embraced the opportunity, and found the poor woman in a state of collapse, and at

the point of death, having been ill only about seven or eight hours. From what I then saw, I could form no particular opinion respecting the disease, and had some intention of making further inquiry regarding it; but, finding that I was likely to alarm those I had occasion to have intercourse with by the dread of infection, which then so generally prevailed, I delayed doing so, until an opportunity by chance occurred of seeing the post-mortem appearances in a patient that died in Edinburgh.

Having heard a lecture by Dr. Macintosh upon cholera, and having both seen a case in life, and also the pathological state after death, I was forcibly impressed with the close analogy which existed between the symptoms that occur in cholera and those which are exhibited in the herbivorous animals, while labouring under diseases of the bowels. I do not mean simply the present epidemical affection, but inflammation or irritation of the mucous membrane of the intestines, more especially the small intestines, at all times; and I must here remark, that the herbivorous animals are generally cut off much more rapidly by diseases of the intestines than man, or the lower omnivorous animals. The braxy or sickness in sheep frequently destroys many in a flock in a night's time. They may all seem quite well at night, but how often does the shepherd find several of them dead in the morning. Cattle, more especially cows, the diseases of which I have more personal opportunities of seeing than other descriptions of that kind of stock, are frequently cut off in a few hours, as is shewn by the examples I have already given; and it is no uncommon thing for a horse to be destroyed in from two to five or six hours by diseases of the bowels. Dogs, however, I have not seen so affected, nor have I found them cut off so quickly as the other animals, although they are liable to a longer catalogue of diseases and derangement of the bowels, and which assume a greater variety of symptoms: still, however, the diseases are not so acute, and the symptoms are not those of that intense agony we find in the diseases of the bowels of herbivorous animals. Indeed, I have observed nothing peculiar regarding their maladies which deserves notice during the period the other animals have been affected; neither have I observed that swine exhibit the same symptoms in diseases of the bowels as the herbivorous animals.

This is a fact, simple as it at first sight may appear, that is of some importance; because, when we take a review of the geographical progress of cholera and the habits and food of its victims, we have one explanation at least of the reason why the disease has been so generally confined to that class among which it has made such melancholy havoc.

In India, where cholera is said first to have appeared, one class of the natives, the Hindoos, live entirely on vegetable matter; while the other, the Mahomedans, are allowed to take a portion of animal food; and while the one is cut off at once by the disease, the other is said to stand it much better and longer, and is not so liable to be attacked. In the track which the disease has pursued, I am inclined to think that its victims are not, whether from necessity or choice, much in the habit of enjoying any great portion of healthy animal food: and in this country, a great proportion of those who have fallen as its victims have been in such circumstances, or addicted to such habits, as to render it not likely that they could obtain a sufficient portion of animal food for the keeping up the healthy action of omnivorous digestive organs.

While the human body may be supported and health maintained upon a vegetable diet, and that too for a considerable period, still it must be acknowledged that, had the Author of Nature not intended that the human appetite should be indulged with the enjoyment of animal food, the digestive apparatus with which he is provided would not have been given; and, as the natural stimulus is necessary in a certain degree for exciting the natural functions of parts, it is not to be wondered at, that, by reducing the human body to the same diet and nutritive stimuli as the herbivorous animals, it should be reduced to a state capable of being acted on by the same causes as in them, and in a similar manner.

That the greater number of those who have fallen victims to cholera have been placed under the circumstances to which I refer, will appear evident when it is allowed that a large proportion have been addicted to habits of dissipation (the effects of the essence of vegetable matter); and, as a necessary consequence of such habits, themselves and their families reduced by the squandering of their means, and the general distress and depression of trade, to subsist entirely on a vegetable diet. The wife and her children, suffering by the drunkenness of the husband and father, are unable to obtain any thing but the most meagre diet, and that, too frequently, without the means necessary for the proper preparing or cooking it; while many or most of those who, in better circumstances, have fallen a sacrifice to cholera, have been reduced to the *necessity* of a vegetable diet either by the effects of dissipation on the constitution, or a disgust of animal food, the effects and natural consequences of other diseases.

It may perhaps be observed, that these remarks will not hold good in warm climates, because the system there loathes animal food; but if the climate reduces the body to such a state of disease, or

susceptibility of disease, as renders it incapable of digesting a due proportion of animal food, even the vegetable matter which the stomach does not refuse, may still be capable of exciting derangement in it. Is not the truth of this proved by the acknowledged advantages derived from the nutritious supply to the poor (the previously predisposed subjects of cholera) by the soup kitchens in Edinburgh? and does not the almost total immunity of those who are in the higher walks of society, and who live upon that food which nature has designed as proper for man, afford another and a striking proof of the remark I have offered?

In illustration of these observations, I cannot omit mentioning the case of a near neighbour of mine, which occurred about two years ago. My sister was one day alarmed by three of the children, of the person I allude to, coming to the door, weeping and in great distress, requesting her to go with them, because their mother was dead. She found the husband standing, as if in a state of stupor; the poor woman lying with her head hanging rather over the edge of the bed, her mouth open, her eyes closed and sunk in her head, her countenance ghastly, and the whole surface of the body intensely cold. She had been suddenly seized with these symptoms two or three hours before my sister saw her, and, from the commencement, had purged and vomited to excess, the discharge per anum being involuntary. Twenty-five drops of laudanum were immediately given to her, and this was followed by a dose of castor oil and plenty of warm water-gruel, which, however, was taken with some difficulty, and hot irons were applied to her feet. The symptoms were relieved soon after the administration of these remedies; but she suffered from severe headache, great weakness, and pains in her limbs, which shot from her thighs downwards. On the fire (if fire a few languishing cinders might be called) stood the pot. The scene of misery which was presented induced my sister to look into the vessel, when she was surprised to find that the repast which was preparing consisted of nothing but a scanty allowance of turnips and potatoes, a diet to which, as she afterwards learned, they had been for some time familiar. The exciting cause has not again operated, or else the allowance of a small portion of animal matter, which they have had occasionally since, and their having otherwise in a slight degree bettered their condition, has obviated its effects.

It is now, however, time that I should attempt to prove more clearly what I have already stated regarding the identity of the cholera in the human being, and the disease which is at present prevailing, and which occasionally prevails amongst the lower animals. In doing this, I shall, in the first place, state the symptoms as they occur in the living being, and then examine the appearance after death.

The human being presents some little variety of symptoms in this disease. In some, cholera is so sudden in its attack, that the person is struck down, as it were, at once; in others, there are premonitory symptoms which may exist even for some days. The collapse is ushered in by a coldness and shrinking of the features, which will in some degree correspond with the vomiting and diarrhœa. Excruciating pains in the bowels and cramps in the extremities also occur. The skin of the fingers and toes becomes blue, and the patient dies.

The lungs are somewhat injected; the bronchial membrane vascular; the villous coat of the stomach softened, and perhaps reddened; the mucous membrane of the small intestines presenting an injected state of its arteries and veins; the mucous coat softened, and, in some cases, small patches of ecchymosis. The membrane of the large intestines somewhat black in its appearance; and this may even occur throughout them all, especially in those cases which have been cut off with the greatest rapidity: the peritoneal coat of the intestines not much affected, but sometimes of a pink hue, from the blood shining through it. The large vessels, both in the thorax and abdomen, commonly more or less turgid with blackblood; and the veins of the brain and spinal cord full of the same kind of blood. The urinary bladder is contracted, and the secretion of urine suspended; the matter which is thrown off both by purging and vomiting is like rice water, mixed sometimes with flakes of coagulated lymph, and in the intestines it is found sometimes bloody.

Now I have stated that herbivorous animals are sometimes cut off in a somewhat similar manner. It is no unusual thing for a horse to be brought to a veterinary surgeon in the most intense agony. He has, perhaps, been seized within half an hour or an hour; he can scarcely be kept upon his legs a moment; he tosses himself down wherever he is for a moment allowed to stand; knocks his head against the wall, or whatever comes in his way, as if, from the intensity of the agony under which he then suffers, he cared not for any other injury: a cold sweat pours from every pore; his eye is fixed, sunk, and glassy; his limbs are convulsed; he sobs, or rather snorts; and a few more convulsive spasms terminate his existence. In others the progress is not so rapid; perhaps the disease, instead of lasting only two or three hours, may, although rarely, continue during as many days.

When a horse in the severer cases of the malady is first brought, the driver or groom generally complains that "he is troubled with a stoppage of his water," and perhaps that "he has passed some awfu' like stuff wi' his dung," that is, it is covered with

slime. This latter circumstance is, however, also found in the more chronic forms of the disease.

On examining a severe case of this kind, it is found that the pulse is, perhaps, raised to eighty, ninety, or above a hundred; it is small and thready, and scarcely to be distinguished in the arteries, while at the heart it may sometimes be distinctly felt. The mouth is generally colder than natural; either dry, with white furred tongue, or filled with a frothy mucus. But there is little time to spare in examination: the animal throws himself to the ground, and continues to toss about, or frequently rising and lying down again until relieved in some way or another. If the extremities are felt, they are cold to the touch, and the tips of the ears are not less so; but the extremities are not only cold, but they have become remarkably *fine* or shrunk. Convulsive spasms soon take place, and he dies.

On examination after death, we find there is a great determination of blood to the deeper seated parts; they are highly inflamed, and the vessels injected with blood. The symptoms and appearance vary, however, according to the *rapidity* of the disease.

The epizootic, which at present rages, has a somewhat curious character. It has been much less destructive than is generally the case with diseases of the bowels, while, at the same time, it presents various modifications. The most conspicuous, and that to which I would more especially direct attention, is diarrhœa, which is now very prevalent. This is the more remarkable, because that complaint in horses is extremely rare.

By improper treatment, such as allowing a horse to drink a large quantity of cold water previous to setting out on a long journey or severe exercise, such a disease is readily produced; but it is quite a different thing to have so many cases without any apparent cause.

With the exception of those I have mentioned, I have had no opportunity of examining the post-mortem appearances of any of those cases of diarrhœa; but, coupled with the circumstance of a great number of other cases of diseased bowels, and having many symptoms in common with the ordinary cases of diseases of the intestines, I cannot but conclude that the mucous membrane of the intestines is the part affected. By referring the malady to this part, we are enabled, indeed, to account for all the phenomena which occur. We see that a certain excited state of that membrane produces the same effect as when it is acted on by purging medicine, depriving the blood of its serum. We see also, that in horses the discharge of mucus coating the dung in flakes is the flocculent mixture in the matter discharged; we have

in the morbid discharge, a consequence of an irritable membrane; the secretion varying according to the state of excitement in the secreting membrane. The state of the membrane will also be regulated, in some measure, according to the discharge; because, if that is very copious, it operates as a powerful means of depleting the system: there will therefore be, in most or all instances, only the effects of the excitement left on the membrane, instead of increased vascularity, because the discharge (the depletion) may reduce even the inflammatory action and appearances from which it at first sprung; so that a softening of the mucous membrane, which is an effect of the irritation, may be all that is left in those cases where the discharge is copious. If, then, the discharge is so powerful as to reduce the inflamed state of this part, it must, at the same time, both by drawing the fluids to the interior of the body, and at once discharging them, as it were, wholesale, rapidly produce a shrinking of the features and a haggard countenance. I must also remark, that, by the great increase in the activity of this membrane as an emunctory, there will be such a deficiency of the blood, that the kidneys, which at all times seem to regulate its quantity and quality, will have nothing to secrete from; there being, in consequence of the other drain, a want of fluids in the system, and hence the absence of the secretion of urine, and the contracted state of the bladder.

By referring the disease to the mucous membrane of the small intestines, we can still further explain the symptoms which occur, because it is well known that irritation in the bowels, in other cases, produces derangement of the nervous system. Hence we find convulsions in dogs from the effects of worms in the small intestines, and many other causes. Indeed, it is scarcely necessary for me to illustrate the circumstance of derangement of the bowels, causing affections of the brain and nervous system; and if that is once admitted, then, I say, it is by no means surprising to find spasms produced in the extremities as an effect of derangement of the bowels.

That this is an effect and not a cause of disease of the bowels, I think, is clearly proved by the circumstance of the diarrhœa being the common precursor, "the premonitory symptom," of the more formidable stages of the disease.

Again, as an effect of the system being robbed of the vital fluid by the purging, and the tendency to syncope consequently induced by the operation of intestinal irritation on the brain, and the disturbance produced by the cramp, we are enabled not only to account for the blueness of the skin, but also for many of the post-mortem appearances.

When a muscle is thrown into considerable action, as we may

illustrate by the effects of the movement of the jaws in bleeding from the neck of the horse, the blood is driven with increased force from the veins of the muscle and from the neighbouring parts, in consequence of the contraction of the muscle. That contraction, if continued, also resists the entrance of the blood into the arteries of the parts in action, and compressed. That bloodvessels are liable to be acted upon by pressure, I need not attempt farther to prove; but the example of the horse's foot, however, is not unworthy of notice: there we find the arteries passing through the bone, that pressure may not affect them; and that the veins may not be injured by it, we find them anastomosing like a piece of net-work, and without valves, in order that the blood may escape from them in every direction, while under its influence.

From this cause, then, we have an absence of blood, or, perhaps, it may be, a little extravasation, in the capillaries; and this resistance to the free circulation acts on the heart, and impedes its action, and also compels the blood to flow to those parts which are not subject to pressure. This accounts for the congested state of the vessels of the brain and spinal cord—an appearance which is to be found as an *effect of all spasmodic affections*, more especially in tetanus; and an effect that has frequently been mistaken for the cause of that disease. From the same cause we find the vessels of the abdomen in a state of congestion. The lungs also, and the heart, and large vessels of the chest, are liable to be congested in a similar way.

This production of congestion in the vessels of the important organs enables us to account also for the occurrence of the fever which so frequently *follows* the other more active symptoms. The congestion of the vessels of the brain and spinal cord may be naturally expected to produce some derangement in these organs; hence headach in the mildest, but typhous fever in the more severe cases, the consequence of recovery from the first shock of the disease.

These effects of the disease upon the nervous system in my patients I have not observed, unless I were to refer the dulness which sometimes exists for a few days to this cause; or, to suppose that some of these cases, where the disease affects the mucous membrane of the bronchiæ, and which are ushered in by colicky pains, are cholera; but this I do not feel disposed to do, nor is it, I think, of much importance that I should endeavour to trace the analogy so far. I shall keep this in view, should any well-marked case occur.

It is now necessary that I should offer some reason why the

mucous membrane in herbivorous animals is more liable to this affection than that of the omnivorous, and also why the disease prevails so much amongst them at the present time. To the first question I am inclined to answer, that vegetable food is more difficult of digestion than animal matter; and that this is proved by the greater length of time required, and the more complicated digestive apparatus with which these animals are provided for the purpose:—that vegetable food presents a greater variety, in regard to its nutritive properties, and is more liable to be acted on by external causes than animal food, and consequently, presented in a greater variety of states to the digestive organs, is more apt to undergo chemical changes in the viscera, producing decomposition and generation of gasses in the intestines. It is also more liable to produce mechanical irritation than animal food.

To the second question, it is by no means easy to give so plausible a reply. It will, however, appear, that if there is at present an analogous disease prevailing both in man and animals, and that that disease has a peculiar character, the natural inference must be, that the same causes which operate in the one must be also exerting their influence on the other. That such is the case, I cannot omit to illustrate, even after all that has already been offered; because on Saturday last, the 10th inst. (after the occurrence of disease of the bowels had in a great measure subsided for two weeks) no less than five cases of this kind happened in my practice, one of which was, perhaps, as well marked with the symptoms of what I have supposed to be cholera, as any that has yet come under my notice; and of these, this week has produced also a large proportion of cases. This recurrence of cases, be it remarked, has been simultaneous with the increase or recurrence of cholera in the human being in the immediate neighbourhood—the Water of Leith; and what is also as remarkable, that although that increase was for several days followed by a number of cases, they have gradually diminished in frequency, and during three days I have not had a case.

What the cause or causes are, I am unable to explain; but if, in addition to what I have already offered, as indicating a long continuance of a peculiar atmospherical influence, we consider the general state of the weather and atmosphere for these two seasons past; the extraordinary brilliancy and frequency of the aurora borealis; and also the following facts, that, during the prevalence of the disease of the mucous membrane of the respiratory organs in the horse, it was observed by Mr. Stevenson, of Redside, near North Berwick, whose horses were almost all affected, that, as he states in a letter to me, dated 6th May, 1831, "it

was a curious fact, that *before* the thunder, upon Tuesday, the black mare and brown horse's (two which died) pulse rose above 100, but after the storm their pulse again fell as low as 70; all the rest of their pulses (the horses which were unwell) were affected in the same manner."

In all those cases in which the disease appeared in a catarrhal form, the situation of the stable seemed to have great influence in producing it; for I observed that, in farm standings especially, all those, where the disease prevailed most severely, stood in situations that exposed them much to the effects of the east winds, which then prevailed; or, if the standings were not so situated, the horses most subject to the disease were those, the nature of whose work most exposed them to this wind. I may also add, that, some time prior to the commencement of the disease at Musselburgh, the sea had for several days been observed to be highly phosphorescent, or "on fire," as the natives of the place emphatically expressed it; all of which seemed to prove a peculiar state of the atmosphere.

I may, therefore, in some measure, at least, be warranted in concluding, that the combination of particular circumstances in regard to food, habits, situation, and atmospherical influence, has had a large share in the production of this malady; and I can farther assert that, whether the disease is propagated by contagion, or not, in the human body, in the animals which have come under my care, there has not been, not even during the period of the affection of the bowels, the smallest reason to suppose that it was produced by that cause.

It is unnecessary, after the detailed account I have given of these cases, that I should offer any lengthened history of the treatment of the disease in the lower animals: I shall only remark, that it consisted in bleeding, the administration of mild aperients combined with opium, together with a plentiful allowance of warm water or oatmeal, or starch gruel; clysters of soap and warm water were frequently thrown up; fomentations of hot water were applied to the belly; or the belly was alternately bathed with hot water, and, when dry, stimulated with oil of turpentine.

In conclusion, I will only remark, that what I have stated has been derived entirely from observations I have made in my own practice; but I have no doubt many others may have noticed similar appearances in theirs, which may further elucidate the subject; and I only hope that what I have stated may tend to throw some light on the nature of a disease, which has filled the world with so much terror.

D.

Veterinary Jurisprudence.

A CASE of glanders in the human being was related in our last number. Dr. Elliotson, to whose kindness we are indebted for the opportunity of seeing it, delivered a very interesting clinical lecture on this subject to his class, at St. Thomas's, on the 28th ultimo. A very good report of this lecture is given in the *Lancet* of March the 9th. We extract a paragraph or two from it:—

The Professor commenced by describing contagion as the communication of a disease which exists in one living system to another living system, whether the two systems be those of human beings, or those of brutes, or those of a human being and a brute. The term, he said, would also hold good as applied to the communication of disease between a vegetable and an animal, if such a contagion were possible, but of that he knew no instance. He then pointed out to the students the exact distinctions which exist between the words contagion and infection, describing them each as a quality which denotes communicable disease, but defining "contagion" to be both that mode of communication which is palpable to the senses (as in the poison of syphilis), and that mode which is not (as in scarlatina), while infection is applicable only to those modes of contagion which are not evident to the senses. "Now, that the diseases of man are communicable to beasts, is a well-established point. The measles, according to good authority, have been imparted to sheep, and a disease of the hair (trichoma), and the plague, have also each been communicated to brutes. Whether that is the case also with any other disease, is not well known. On the other hand, several diseases may be communicated from brutes to men as the cow-pox by vaccination, the mange from dogs (in which case the disease in man assumes the appearance of itch), and also hydrophobia, the probability being, that in each case the disease may be given back again from man to the brute. The cow-pox certainly may, and Magendie has himself reproduced hydrophobia in a dog, by inoculation from the froth of a rabid man. To these instances may now be added glanders, a disease which must be ranked as one of the most readily communicable of them all, to be caught, however, only by contact with the diseased secretion from the mucous membrane of the nostrils in glandered animals, or the pus produced in the tumours on other parts. The glanders, according to the testimony of the first veterinarians, is not acquirable by any other mode, nor by infection.

"The fact of its occurrence in man was first established, or made highly probable, in this country, by Mr. Coleman, and by two cases which came under the notice of Mr. Travers, recorded in his work on "Constitutional Irritation," as being very like cases of glanders, but described by him (as though glanders in man were not possible) as instances of a diseased state of the constitution. Mr. Coleman had taken some of the glanderous matter from one of the men, and inoculated an ass with it. Glanders and farcy were the result, and death ensued in twelve days. Farther proof, moreover, was obtained, yet the facts were alluded to at the time by Mr. Travers as a matter for wonder, that disease could be communicated from a man to a brute, and yet the disease in the brute not be the same as that which existed in the man.

"With regard to the period of time during which any cases have been recorded as cases of glanders in the human being, it may be mentioned that, ten years since, two instances were recorded in Rust's German journal, both of them ascribed by the narrators to contagion from glandered horses, the editor also himself stating it as his opinion that the assumption was correct. In these cases, a minute account of all the post-mortem ap-

pearances was given, except those of the abdomen, in which respect the last autopsy at St. Thomas's is the only complete one."

The learned lecturer concluded with some reflections highly interesting to the veterinary practitioner; for human life has far too often been sacrificed, either by the carelessness or foolhardiness of the servant, or the disgraceful indifference or recklessness of the master; and tens of thousands of horses, more than the public dream of, have been lost from accidental or thoughtless exposure to contagion. During the latter part of the last winter, glanders became a perfect pest in some parts of the metropolis and its neighbourhood. In a very limited district more than two hundred horses died. There was nothing peculiar or different in the general management; but the evil was, in several cases, clearly traced to the introduction of a glandered horse into the stable, who, in the course of a few months, left scarcely a sound or living one there.

Dr. Elliotson shall speak for himself, although his remarks, very naturally, refer to the human being more than the brute.

"A few words, gentlemen, as to the sanitary application of the facts which are now so prominently before us. The subject is one of the highest public importance, and demands the serious consideration of those on whom the care of the public health devolves. The facts peremptorily behove all persons who have any thing to do with glandered horses, instantly to destroy them, and in all cases to do so, unless a cure be discovered for the disease, or some new mode of treatment be proposed. I am told by Mr. Youatt, and other veterinary gentlemen, that at least forty-nine out of every fifty glandered horses ultimately perish of the disease. Then why suffer animals so frightfully dangerous to linger out the remainder of an existence which they pass so wretchedly, and run the chance of giving the disease to other animals and to man? With such evidence before us, every glandered horse in the kingdom ought to be killed forthwith, unless it is thought fit to institute some new investigation into the treatment of the disease. Nothing can be more wrong than to keep glandered horses alive for the little work which may, in spite of the debilitating effects of the disease, be forced from them. Let their owners but reflect for a moment on the multiplied opportunities which occur for contagion between these animals,—the innumerable occasions for smearing with the poisonous matter the various parts of the stable,—the risk of depositing it on the grass when turned out,—and, above all, of giving it to man, who must assuredly perish by it in the most dreadful manner, for no remedy is known for it. The effect is awful to me, beyond anything that I ever witnessed in disease. Here we may have young men in all but perfect health one week,—after acute suffering, offensive discharges, and sores and putrefaction, corpses on the next. I thought when I had seen the fatal cholera that I had witnessed the acme of sudden suffering and death; but the man who is glandered presents a scene quite as heart-rending to our view as the cholera patient."

TO CORRESPONDENTS.

Communications have been received from Mr. Aitken and "A Veterinary Surgeon."

The Monthly Report is excluded by press of matter.

THE

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XXVIII.

The Symptoms, Causes, and Treatment, of Inflammation of the Lungs in the Horse.

WE will now proceed from the mucous membrane of the bronchial passages to that which lines the air-cells of the lungs, or to the proper cellular texture or substance of the lungs,—the interior of the lobuli to which we have traced the air-tubes, and in which the important change of the blood is effected. I have said, that the intimate structure of these lobuli has never yet been demonstrated; but we can scarcely avoid considering them as composed of little cells or pouches, into which the air is at length conducted, and over the delicate membrane constituting the divisions of which myriads of minute bloodvessels are ramifying. The blood is not merely permeating them, but it is undergoing a vital change in them: there is a constant decomposition of the air, or of the blood, or of both; and during the excitement of exercise that decomposition proceeds with fearful rapidity. Then we can readily conceive that a membrane so delicate as this must be, in order that its interposition shall be no hinderance to the arterialization of the blood, so fragile also, and so loaded with bloodvessels, must be exceedingly subject to inflammation, and that of a most dangerous character.

Causes.—Inflammation of the parenchyma of the lungs is the not unfrequent consequence of all the diseases of the respiratory passages that we have considered. Catarrh, influenza, bronchitis, if neglected or badly treated, or sometimes in spite of the most skilful treatment, will spread along the mucous membrane, and at length involve the termination of the air-passages. At other times we have pure pneumonia. This cellular texture is the primary seat of inflammation. It is often so in the over-worked horse. After a long and hard day's hunt, it is very common for horses to be attacked by pure pneumonia. A prodigiously

increased quantity of blood is hurried through these little vessels, for the vast expenditure of arterial blood in rapid progression must be provided for. These minutest of capillaries are sadly distended—irritated; their contractile power is destroyed—inflammation is produced—mechanical injury is effected—the vessels are ruptured—blood is poured into the interstitial texture, —this increases the irritation,—intense inflammation and congestion, with all their train of fatal consequences, ensue.

Alternations of Heat and Cold.—The following are the most frequent causes of pneumonia. A sudden change from heat to cold,—the change from a warm stable to a colder one—the neglect of the usual clothing—the neglect even of some little comforts—riding far and fast against a cold wind, especially in snowy weather—loitering about when unusual perspiration has been excited—loitering tediously by the side of a covert on a chilly blowing morning: the experience of every day convinces us, that these are the usual causes of pneumonia. The thing is so plain, that I am almost ashamed to detain you for a moment about it. Can any one hesitate as to the effect of cold applied to the extensive surface of the skin—closing so many pores—determining so great a quantity of blood to other parts—causing disturbance every where, and especially in the pulmonary circulation,—in that part which, from the delicacy and complexity of its organization, and more especially from the injury it has received by our absurd and cruel management of the horse, is most of all subject to inflammation, and that of the intensest kind?

It has not unfrequently happened, that when horses have been turned out too early to grass, or without gradual preparation, pneumonia has supervened, and especially if other causes have assisted. Few horses are, under any management, so subject to pneumonia as they who, in poor condition, and without preparation, are turned into a salt-marsh. The Plumstead marshes below Woolwich are notorious for this.

On the other hand, I can imagine that a sudden and considerable change from cold to heat shall be followed by inflammation of the lungs. Many horses perish in the dealers' stables from this cause. The circulation is considerably quickened; more blood, and that more rapidly, is driven through the lungs, previously disposed to take on inflammatory action; yet even here the sudden removal from the heated stable to the cold air, for the purpose of examination, has much to do with the production of disease. But enough of the causes of pneumonia.

Symptoms.—Whether it is the consequence of previous disease of the respiratory passages, or inflammation first appears in the cellular texture of the lungs, pneumonia is usually ushered

in by *rigor*. The horse is cold all over; this, however, soon passes off, and we have general warmth, or heat of the skin above the usual temperature, but accompanied by *coldness of the extremities*—intense deathy coldness. This is a perfectly diagnostic symptom: it will never deceive you. It is an early symptom; it is found when there is little or no constitutional disturbance,—when the pulse is scarcely affected, and the flanks heave not at all, but the horse is merely dull and off his feed. It is that by which you will mark the progress of the disease when others scarcely suspected its existence. The blood is determined to the inflamed part—it is congested in the lungs—a diminished portion of it passes the left side of the heart—it scarcely reaches the extremities, or it is not sufficiently arterialized, and little heat is consequently extricated in its change to venous blood.

The *pulse* is *not* always at first *much increased* in rapidity, and it is rarely or never hard: it is *obscure, oppressed.* The heart is labouring to accomplish its object—the circulation through the lungs is impeded—the vessels are engorged—they are ruptured—blood is extravasated into the air-cells—it accumulates in the right side of the heart—and in the larger vessels, and in the venous circulation generally, there is a mechanical obstruction, which the heart has not power to overcome: hence the obscure, oppressed pulse,—the ineffectual attempt to urge on the blood; and hence, too, the remarkable result of bleeding in inflammation of the lungs—for the pulse becomes rounder, fuller, quicker. When blood is abstracted, a portion of the opposing force is removed, and the heart, being enabled to accomplish its object, the pulse is developed.

It is only, however, in the early insidious stage that the flanks are occasionally quiet: if the compressibility of the lungs is diminished by the thickening of the membrane, or the engorgement of the vessels, and the filling of the cells, it will be harder work to force the air out; there must be more evident effort, and that which cannot be accomplished by one effort is attempted over and over again. *The respiration is quickened—laborious;* the *inspiration is lengthened,* in order to lessen the pain which the distending of the vessels occasions; the *expiration is rapid,* in order to get rid of the pain caused by the state of distention; and when, after all, the lungs cannot be compressed by the usual means, every muscle that can be brought to bear upon the part is called into action. Hence, *the horse will not lie down,* for he can use the muscles of the spine and the shoulder with most advantage as he stands: hence, too, the very peculiar stiffness of position—the *disinclination to move.* There are various muscles whose action can be

materially changed when we change the fixed point. The muscles which compose the serratus magnus influence the motion of the shoulder, while the chest remains a fixed point; but when, by throwing the whole weight on the fore extremities, the limbs are made the fixed point, the chest is materially expanded by the action of the same muscles. Therefore the horse with decided pneumonia can scarcely be induced to move at all; he cannot spare for a moment the assistance which he derives from these muscles, and he will continue obstinately to stand until he falls exhausted or dying. How eagerly do we ask when we go into the stable, Was he down last night? And we conclude that we have not made much progress in the case when the answer is in the negative. When he is wearied out and lies down, it is only for a moment; for if the inflammation is not subdued, he cannot dispense with the auxiliary muscles. He frequently, and with doleful expression, *looks at his sides*—at one side or at both, accordingly as one or both are involved; there is not, however, the decidedly haggard countenance of bronchitis; and you will recollect, that in bronchitis the horse rarely or never gazes at his flanks—his is a dread of suffocation more than a feeling of pain. The *head is protruded,* and *the nostrils distended,* and *the mouth and the breath intensely hot. The nose is injected* from the earliest period; and there is not merely injection, but the membrane is uniformly and intensely red. The variation in this intensity is anxiously marked by the observant practitioner; and he regards with fear and with despair the livid or dirty brownish hue that gradually creeps on. The continued intensity of inflammation he can probably combat, but he cannot repair the exhausted and disorganized tissue.

Progress of the Disease.—The unfavourable symptoms are, increased coldness of the ears and feet, if that be possible; partial sweats, grinding of the teeth, evident weakness, staggering, yet the animal will not lie down; the pulse quickening, and becoming weak and fluttering; the membrane of the nose paler, but it is a dirty paleness; the animal becoming stupid, comatose: at length he falls, but he rises immediately: for awhile he is up and down, until he is no longer able to rise; he then struggles severely—groans; the pulse becomes more rapid, fainter, and he dies of suffocation. The disease sometimes runs its course with strange rapidity. I have known a horse destroyed by pure pneumonia in twelve hours. The vessels ramifying over the cells have yielded to the fearful impulse of the blood, and the lungs have presented one mass of congestion.

The favourable symptoms are, the return of a little natural warmth to the extremities; the circulation beginning again to

assume its natural character; and, next to this, the lying down quietly and without uneasiness; shewing us that he is beginning to do without the auxiliary muscles. These are good symptoms, and they, too, will rarely deceive.

Terminations of Pneumonia.—*Congestion* is a frequent termination of pneumonia. Not only are the vessels gorged,—the congestion which accompanies common inflammation,—but their parietes are necessarily so thin, in order that the change in the blood may take place although they are interposed, that they are easily ruptured, and the cells are filled with blood. This effused blood soon coagulates, and the lung when cut into presents a black, softened, pulpy kind of appearance, termed, by the farrier and the groom, *rottenness*, and being supposed by them to indicate an old disease. It proves the violence of the disease, the rupture of many a vessel surcharged with blood; and it also proves that the disease is of recent date; for in no great length of time the serous portion of the blood becomes absorbed, the more solid one becomes organized, the cells are obliterated, and the lung becomes *hepatized*, or bears considerable resemblance to liver. The farrier is now, however, becoming a little enlightened on this point, and regards this appearance of the lung as indicating intense but recent disease; yet only a few years ago many a dealer was unjustly punished in his pocket for selling a rotten horse, whereas the inflammation and effusion had been produced by some accidental cause, or by too early and severe work after the animal had left the dealer's stable, in which he had been made up for sale. Here is a very fine specimen of congestion. The cells appear to be all filled; the lung is quite impervious; respiration could no longer be carried on, and the horse died of suffocation. Here is another specimen in which the inflammation appeared also to pervade the whole of the lung; there is a redness; great turgidity of the vessels everywhere, but it has not run on to effusion: the vessels were not ruptured.

The Value of Auscultation.—In every case of pneumonia, have early and anxious recourse to *auscultation*. Make yourselves perfectly acquainted with the deep distant murmur presented by the healthy lung. This sound is most distinct in the young horse, and especially if he is a little out of condition. On such a horse the tyro should commence his study of the exploration of the chest. There he will make himself best acquainted with the respiratory murmur in its full state of development. He will next take an older and somewhat fatter horse; he will there recognize the same sound, but fainter, more *distant*. In still older and fatter horses there will sometimes be a little difficulty in detecting it at

all. Repeated experiments of this kind will gradually teach the young veterinarian what kind of healthy murmur he should expect from every kind of horse that is presented to him, and thus he will be better enabled to appreciate the different sound exhibited under disease.

Attention to Auscultation urged.—Before Laennec had led the human practitioner to adopt the invaluable method of exploration, or the veterinarian had dreamed of such a mode of examination, the most useful guide we had in ascertaining the nature and progress of disease in our dumb patients was the pulse. I think I can safely say, that for nearly a twelvemonth I daily studied the pulse of every horse in the Veterinary College, anxiously comparing it with the age, breed, disease, and varying character of disease; and I look back on these hours as spent the most use fully of all in the preparation for professional duty. You, gentlemen, have now another guide fully as valuable in all the diseases of the chest. Avail yourselves of the same opportunity to derive from it all the advantage it can afford you. It will be time most profitably spent, and the recollection of it will be gratifying to you. In this perambulation of the hospital, and in the cultivation of morbid anatomy (not a succession of barbarous operations and experiments; do not disgrace yourselves by them; they will not afford you matter for pleasing reflection hereafter;—in the cultivation of morbid anatomy, I say) in the knacker's yard, you will be laying a surer foundation for future reputation and usefulness, than in the attendance on any lectures, however gifted the teacher.

The Crepitus of Pneumonia.—Then make yourselves acquainted with the deep distant murmur presented by the healthy lung. If pneumonia exists to any considerable degree, this murmur will be changed for, or mingled with, as I observed in the last lecture, a curious *crepitating sound.* This once remarked, cannot well be mistaken. It is caused by the infiltration of blood into the air-cells; its loudness and perfect character will represent the intensity of the disease, and the portion of the chest at which it can be distinguished will clearly indicate the extent of the disease.

Hepatization.—The whole lung, however, is not always affected, or there are only portions or patches of it in which the inflammation is so intense as to produce this congestion: enough remains either unaffected or yet pervious for the function of respiration to be performed, and the animal lingers on, or perhaps recovers. Then the process which I have just described will take place where the inflammation has been most intense. The serous portion of the blood will be absorbed, and the more solid will become

organized, impervious, *hepatized.* By careful examination with the ear, you will be enabled to get at this also. Where the lung is impervious—where no air passes—no sound will be heard, not even the natural murmur. Around it the murmur will be heard, and louder; it will be a kind of rushing sound; for the same quantity of blood must be arterialized, and the air must rush more rapidly and forcibly through the remaining tubes: and if there is considerable inflammation or tendency to congestion, the crepitating crackling sound will be recognized, and in proportion to the intensity of the inflammation. Gentlemen, I do not overrate the advantages to be derived from the study of auscultation. It was strong language lately applied by an able critic to the use of the *stethoscope* by the human practitioner; I would literally apply it to the use of immediate auscultation, that "it converts the organ of hearing into an organ of vision, enabling the listener to observe, with the clearness of ocular demonstration, the ravages which disease occasionally commits in the very centre of the ribbed-cased cavity of the body."

A horse with any portion of the lungs hepatized cannot be *sound.* He cannot be capable of continued extra-exertion; his imperfect and mutilated lung cannot supply the arterialized blood which rapid progression long continued requires, and that portion which is compelled to do the work of the whole lung must be exposed to injury and inflammation from many a cause that would otherwise be harmless. Here are several specimens of hepatization.

Tubercles.—Another consequence of inflammation of the substance of the lungs is the formation of *tubercles.* There is a great deal of mystery, and there has been some acrimonious dispute, about this. It would seem that at first there are a greater or smaller number of little distinct cysts, cells into which some fluid is poured in the progress of inflammation: the cells become gorged, distended, and occupy a space varying from a pin's point to a large egg. Here is a beautiful specimen of tubercles of the lung, each nearly the size of a filbert. Here is another in which they are more numerous, but not so large as the smallest millet-seed. This last belonged to a glandered horse.

By degrees the fluid becomes concrete; the little tumour is much harder than the surrounding substance, and so it continues for a while—the consequence and the source of inflammation. It occupies a space that should be employed in the function of respiration, and by its pressure it irritates the neighbouring parts, and exposes them to inflammation.

By and by commences another process, never sufficiently explained. The tubercle begins to soften at its centre,—a process

of suppuration commences, and proceeds until the contents of the cyst become again fluid, but of a different character,-for it now consists of pus. The pus increases; the cyst becomes more and more distended; it encroaches on the substance of the lungs on every side; it comes into contact with other tubercles, and the walls opposed to each other are absorbed by their mutual pressure; they run together, and form one cyst: morbid anatomists term this a vomica. It is no process of ulceration, no corroding or eating into the substance of the lungs, but a gradually increasing and regular excavation, and this sometimes runs on to a very great extent, until a considerable portion of the lung is, as it were, hollowed out. By and by, however, the vomica presses upon some bronchial passage, and the cyst gives way; and the purulent contents are poured into the bronchiæ, and got rid of by the act of coughing: a great quantity of pus, and often fœtid, is thrown up; at other times the quantity is too great to be thus got rid of, and the animal is suffocated. Sometimes it will break through the pleuritic covering of the lung, and pour its contents into the thorax.

Abscesses may exist in the Lungs undiscovered.—It is scarcely conceivable to what extent these abscesses may exist in animals of slow work, without their being discovered by the usual means of examination. Mr. Hales tells us that he gave a physic ball to a cart-mare with a bad foot, and she soon afterwards died suddenly. When inquiring as to the cause of death, he was told, and not very good-humouredly, that his physic had killed her. He asked, if it had purged her violently? "No!" it was replied, "it had not operated at all." She was opened, and the mystery was all unravelled. The thorax was deluged with pus, and there were then in the lungs several large abscesses, one of which contained at least a quart of pus. The mare had not shewn a symptom of chest affection, and the gentleman to whom she belonged, declared that he had believed her to be as sound as any horse he had in his possession.

Sometimes, I believe, there is true ulceration of the lungs, and seemingly not connected with the presence of tubercles. I cannot tell you how you may ascertain this. I am not sufficiently master of auscultation to describe the difference in the sound; or, rather, as no sound would be given immediately from the part through which no air passed, it would be impossible to distinguish the one from the other. One thing however we know, that where the progress of ulceration is rapid the horse must die: his wind might be impaired, but his life would not always be endangered by the existence of tubercles.

Resolution of Inflammation.—The resolution or gradual abate-

ment of inflammation is the termination most to be desired, and then the engorgement of the vessels will gradually cease, and the thickening of the membrane and the interstitial deposit will be taken up, and the effusion into the cells will likewise be absorbed, and the lungs will gradually resume their former cellular texture; yet not perfectly: there will be some induration, slight but general; or some more perfect induration of certain parts; or the rupture of some of the air-cells; or an irritability of membrane predisposing to renewed inflammation. We may save the horse, but he will not always be as useful as before. These sequelæ, under the terms chronic cough, thick wind, broken wind, merit distinct consideration; but for the present I must proceed to the treatment of pneumonia.

Treatment—Bleeding.—Here again commence with bleeding. You have inflammation of that organ through which all the blood in the frame passes—that organ most of all subject to congestion. Nothing can be so important as to lessen the quantity of blood which the heart is endeavouring to force through the minute vessels of the lungs, distended, irritated, breaking. When you bleed in other cases, you lessen the quantity of blood given to the part only in proportion, and that often a very small one, to its share of the general mass of fluid; but here every drop you take away is so much subtracted from the quantity of blood permeating the over-distended and overworked capillaries. Then bleed, and bleed copiously too. In a decided case of inflammation of the lungs, try to knock the disease down at once—it is your best and sometimes will be your only chance. Take, in a manner, as much blood as you can get; let the stream flow on until the pulse falters, and the animal bears heavy upon the pail: and take the blood which you do take as quickly as you can take it: —let your lancet be broad-shouldered, and the orifice large. This is the secret of treating inflammation of a vital organ, and of an organ like this. You weaken or destroy the disease, without permanently impairing the strength of the patient; whereas by small bleedings, and with a small stream, you are sapping the strength of the patient, while the disease remains untouched. Gentlemen, if I can only impress this truth upon your minds—this polar star in practice—the memory of our transient connexion will not be displeasing to either of us.

Physic.—Next comes purging—yes, if we dared; for we should get rid of some cause of excitement, and lessen the circulating fluid, and produce a new determination of the vital current: but experience teaches us, that in pneumonia there is so much sympathy with the abdominal viscera,—there is such a fatal tendency in the inflammation to spread over every mucous

membrane, that purging is almost to a certainty followed by inflammation, and that inflammation bids defiance to every attempt to arrest it. I speak with perfect consideration when I affirm that, in the majority of cases, a physic ball would be a dose of poison to a horse labouring under pneumonia.

May I not relax the bowels? Yes, if I could stop there. In my own infirmary, and there we should endeavour to get all cases of this description, I may, after the inflammation has evidently a little subsided, venture upon, yet very cautiously, small doses of aloes—half a drachm two or three times in the day in my fever medicine, and I may quicken it by frequent injections of warm soap and water; omitting my purgative, however, the moment the fæces are becoming pultaceous: but I must be assured that the inflammation is subsiding, and I must have considerable constipation, or I had better let my purgative alone. I have, in an early period of practice, more than once killed a horse labouring under inflammation of the lungs with two drachms of aloes.

Sedatives.—If I must not give physic, I must endeavour to find some auxiliary to the bleeding, and I have it in the compound of *digitalis, nitre, and emetic tartar,* which I have so often recommended. The foxglove, a direct and powerful sedative, whose principal effect is produced on the heart, lessening the number of pulsations, and that by a curious intermission of the heart's action; while its secondary effect is also a useful one—namely, that of a diuretic. Some practitioners prefer the *white hellebore.* It is a powerful nauseant—it lowers the frequency and the strength of the pulse, but it does so almost on the principle of a blister, by producing a powerful counter-determination of blood, and that principally to the brain. By the excitement of the brain or its membranes, which it seems to produce, it diverts the inflammation, or a portion of it, from its original seat. In this respect it is as powerful as we could wish, and in our own infirmary, and where we see our patient a dozen times in the day, it may be used with safety: but, out of doors, and where we do not see him more than once in twelve or four-and-twenty hours, it seems a little too much like playing with edged tools. If the tremor, the vertigo, and the purging, which it produces, are carried a little too far, the patient may be lost. Generally speaking, the hanging of the head, and the foaming at the mouth, and the sinking of the pulse, may give warning; but our assistant may not observe these symptoms, or they may have existed many an hour before he arrives. In our own hospital it may be admitted, and will not often deceive; but even there we could wish for something as effectual and safer, and you recollect the ac-

count in the last lecture of its alarming effects when administered in a case of bronchitis. We, however, have that which is even more effectual, and which never did harm,—the digitalis. In the course of twenty years' practice, I do not recollect a single case in which I had cause to repent of the exhibition of digitalis; but I have attributed the deaths of more patients than one to the incautious use of hellebore. The nitre is a refrigerant and a diuretic, and the emetic tartar is a nauseant and a diaphoretic.

General Care.—Having determined on the medicine, I think of the kind of care which the patient needs. I direct his legs to be well hand-rubbed, in order to restore, if I can, the circulation to the extremities; and I direct that comfortable flannel rollers shall encase the legs from the foot to the knee. I cover him up warm. Can there be a doubt about this? I wish to divert the current of blood as much as I can to the skin. I know that cold applied to the surface will determine the blood to the centre, and cause it still more injuriously to congest upon and around the seat of inflammation; therefore I uniformly clothe him well. As for air, in warm weather he cannot have too much. In cold weather his box must be airy, but not chilly. I want to determine the blood to the extremities and the skin, but not all the clothing in the world will keep my patient warm, if he is placed in a cold and uncomfortable situation.

Food.—As for food, I think not of it. In nine cases out of ten he will not touch any thing; and if he is inclined to eat, I give him nothing but a bran-mash, or a little green-meat, or a few carrots.

Blisters.—I now look about me for some counter-irritant. I wish to excite some powerful action in another part of the frame, and which shall divert the current of blood from that which was first affected. I recognize it as a law of nature, and of which I here eagerly avail myself, that if I have a morbid action in some vital part, an unusual determination of blood to it, I can abate, perhaps I can at once arrest, that morbid action by exciting a similar or a greater disturbance in some contiguous and not dangerous part. Therefore I blister the sides and the brisket; I produce all the irritation I can on the integument; and in proportion as I do so, I abate the inflammation within. But then there are certain considerations which I must not forget. The original inflammation may be so intense that it will occupy—absorb, as it were—the whole energy of the vital principle. The system shall be so oppressed, overpowered, as to be insensible to every thing else. Then I must somewhat abate the original inflammation by other means, before I can hope to derive any benefit from my counter-irritant; and, more than this, it is pro-

bable that, if my stimulus is not powerful enough to abate the first inflammation, it may do more harm than good, by increasing or even producing general irritation. Therefore I do not blister immediately. I see what will be the effect of my first bleeding, and my sedative medicines; and if I am making some progress, I call in the blister to my aid: I prevent the foe from rallying, and perfectly accomplish his subjection. Therefore, also, it is that our blisters do not sometimes rise. The original inflammation has not been weakened. It is more powerful than any stimulus we can apply; and we augur badly when this is the case.

The way being prepared for the action of a counter-irritant, we have recourse to a blister in preference to a seton; and decidedly so, for our stimulus can be spread over a larger surface,—there is more chance of its being applied to the immediate neighbourhood of the original inflammation—and, most assuredly, from the extent of surface which I can inflame, I can apply a quantity of stimulus beyond comparison greater than a seton would permit me to do. I might insert a seton in an obscure case; but I should be justly deemed an unscientific practitioner if I had recourse to one in preference to a blister, in a plain case of acute pneumonia. *Rowels* are frequently excellent adjuvants to the blister, but should not be depended upon alone. In the *latter* stage of disease the blister will not act, because the powers of nature are exhausted. We must repeat it,—we must rub more of the ointment well in,—we must rouse the sinking energies of the frame, if we can: the effort, however, will generally be fruitless, and the not rising of a blister, in the latter stage of the disease, may generally be regarded as the precursor of death, and especially if it is accompanied by the livid or brown colour of the membrane of the nose.

Care and Attention.—Pneumonia, like bronchitis, requires anxious watching. The first object is to subdue the inflammation, and your measures should be prompt and decisive. If the mouth continues hot, and the extremities cold, and the nose red, bleed again and again, and that in rapid succession. The good which you can do must be done at first, or not at all. When you have got a little returning warmth to the extremities, you will continue to give your sedative medicines, and without one grain of a carminative or a tonic; and the return of the deathy-cold foot will be a signal for further depletion. The commencement of the state of convalescence requires the same guarded practice as in bronchitis. As many horses are lost by impatience now, as by want of decision at first. If you have subdued the disease, let well alone: guard against the return of the foe by the continued administration of your sedatives in smaller quantities; but give

no tonics unless debility is rapidly succeeding. And when you have fairly weathered the storm, and your patient seems to be well, still be cautious—consider the nature and the seat of the disease—the predisposition to returning inflammation for many a week, and let not the lungs be put upon. If the season will permit, let a two or three months' run at grass succeed to your medical treatment; but if this is impracticable, put off the period of active work as long as you can persuade your employer to let it be delayed; and even after that, let the horse return as gradually as may be to his usual employment and food.

ON HEPATITIS, TRACHEITIS, AND OBSCURE LAMENESS OF THE HIND EXTREMITY.

By Mr. W. C. Spooner, *V.S., Blandford.*

Some few weeks since I was sent for to examine a horse belonging to a gentleman in this neighbourhood. I found that he had been first observed to be ill three or four days before I saw him, and had scarcely eaten any thing since. The owner, however, considered that he had merely a cold, and had employed no treatment, with the exception of the abstraction of eight pounds of blood the day previous to the one I saw him. The horse was aged, but in high condition, and had been hunted about ten days previously. Symptoms: pulse seventy-five; breathing rather accelerated; extremities very cold; fæces not very hard, but rather slimy; conjunctival and buccal membranes injected and yellow. I found, on inquiry, that the horse had had a cough for several days, but which, for the last twenty-four hours, had not been so frequent. I immediately bled him to the amount of 15lbs, and gave the following ball—aloes ʒiv, hyd. submur. ʒiss, pot. nit. ʒiii, antim. tart. ʒi, digital. pulv. ʒi, and ordered a fever ball to be given every four hours, composed of the three latter ingredients, with the addition of a drachm of calomel twice a-day. I considered the disease to be hepatitis, accompanied with inflammation of the larynx, and with this view I had a strong blister rubbed on the right side, and the throat and neck. My prognosis, however, was unfavourable, and I told the owner I had but little hope of a favourable termination.

2d day.—No better; pulse seventy-eight, and weaker than yesterday. Extremities exceedingly cold; fæces rather softened; blister has not risen. Venesection five pounds; blood of a dark colour, some time coagulating, and the mass not firm in substance. Fever ball continued, with a drachm of calomel twice

a-day; blister on the left side, and repeated on the right side and throat.

Evening.—Pulse eighty-six; respiration scarcely quicker than its natural state; the other symptoms much the same.

3d day.—Worse; pulse ninety-two, and exceedingly weak; dung harder; urine increased, and frequently discharged; membrane very yellow, and a dirty discharge appears from the nostrils. Ol. lini. sem. ℔j. aloes ʒiss in haust.; fever balls repeated without the nitre; injections of warm water; blister repeated on sides and throat.

Evening.—No better.

4th day.—The same treatment was continued with some variation, but the horse continued to get worse, and died during the night. The blisters had not risen in the slightest degree, though repeated once or twice every day.

Post-mortem appearances.—Liver quite yellow, and approaching to mortification; its substance could be broken with the slightest touch. One of the lobes of the lungs was healthy, the other inflamed, and in part hepatized; and a portion emphysematous. The mucous membrane of the larynx, trachea and bronchiæ was of a dark green colour, and one of the kidneys was also considerably inflamed. The horse, I understood, had been subject to an occasional cough for some time past, and about a fortnight prior to his death had been ridden through some water.

Hepatitis, I believe, has prevailed in some places to a great extent. I have seen but little of it myself; but, I understand, that the Third Dragoon Guards, whilst staying at Brighton, had a vast number ill with this disorder, and many died.

This inflammation of the trachea, however, has been a very frequent complaint in this neighbourhood during the last winter and the previous autumn, and a more insidious and troublesome disease scarcely exists: its fatality probably arises from its deceitful nature, its appearance at first being so much like a common cough, for which no advice is resorted to, save that of the groom or blacksmith. A horse, perhaps, is observed to have a hard cough; this cough increases, the appetite diminishes, but no discharge of mucus appears from the nostrils: the breathing becomes accelerated, but not oppressed, nor so quick as to alarm the attendants. In a few days the animal refuses his corn entirely, and it is thought better to seek professional assistance. The practitioner finds him in the above state; the extremities perhaps cold, or hot and cold alternately; pulse from sixty to seventy-five; but is told that the cough is much better. The cough is probably much less frequent, and, in a day or two, ceases altogether; but this, instead of being a good symptom, is one of the

worst that can appear; for what does it shew—that the inflammation is less ?—no; the pulse belies this: it shews that the intensity of the inflammation has left the larynx, where it has not been relieved by a discharge of mucus, and is making its rapid march by continuity of surface to the lungs. The veterinarian puts in requisition the aids of venesection and medicine, but finds that the blister he applies to the throat and neck produces no effect, and, if this is the case, the animal in all probability dies. The complaint, however, does not usually cause death in a day or two, and the horse, in the eyes of the attendants, often seems better: the practitioner is told, perhaps, in the morning, when he visits his patient, that he is much better; but a few minutes' observation with the finger on the pulse convinces him of the fallacy of the assertion. In a few days a bloody offensive discharge appears from the nostrils, which puts him (in the opinion of the veterinarian) beyond the sphere of hope. The breathing during this time may present various appearances, sometimes much accelerated, at other times scarcely quicker than in health. The post-mortem examination discovers the mucous membrane of the trachea, &c. approaching to a state of gangrene, and the lungs bearing the marks of the direful spread of the malady. I know not to what cause to attribute the unusual spread of this complaint, or why it should appear with so virulent a character. May not the inflammation be so intense as to suppress the secretion of mucus altogether? and may not the want of nature's relief be one reason for the great danger that attends the complaint?

DISEASE OF THE HOCK JOINT.

Whilst making the post-mortem examination I have before described, the owner informed me that the horse had been affected with a slight lameness behind, most noticeable on moving him out in the morning, but which nearly disappeared with exercise, and again became considerably worse after hunting, and then required a week's rest or more to bring him comparatively well again. There were no ringbones or spavins, and I felt convinced that the mischief existed between the tibia and astragalus. I therefore described the parts to the owner, and the appearances I was pretty certain I should find. The joints were opened, and a moment discovered an abrasion of the middle protuberance of the tibia, about half an inch in length, and a fourth of an inch in breadth, with a corresponding though less appearance on the concavity of the astragalus.

In the December number of THE VETERINARIAN, 1830, now upwards of two years since, in a paper on this complaint, I endeavoured to call the attention of others to it. I am not aware

that any other person has pointed out the true seat of this frequent lameness, and I therefore think that I may lay claim to some slight originality, as being the first that called the attention of the profession to what I conceive a matter of some importance. I know not whether others have since made similar observations, but increased experience has strengthened my opinion, and added to the facts that I then brought forward in its support. I have since obtained three specimens of this disease, one accompanied with spavin, the others without any enlargement. The history of these cases during life I am acquainted with, and they now make seven specimens of the kind in my possession. Though not perhaps quite so common as the navicular lameness in the fore foot, it much resembles it in its nature, and is, I think, the cause of nineteen cases out of twenty of every obscure lameness of the hind extremity.

ON HÆMATURIA (REDWATER) IN CATTLE.

By Mr. J. D. Harrison, *V.S., Lancaster.*

That chonic indigestion in cattle is a principal cause of most diseases to which they are incident, has long been observed by me; and taking into consideration the complicated structure of the digestive organs, we need not be surprised at any derangement, or disease, produced in them, either from accidental or other causes. Hæmaturia, I am perfectly convinced, owes its origin to it, at least in the generality of cases; and I feel quite assured that the discolouration of urine is entirely referrible to that cause, and not to any nephritic affection, as is too generally and oft-times fatally supposed. Scarcity, or a total privation of water, evidently appears to be the exciting cause of producing that disordered state of digestion requisite for the development of this disease; and this supposition is still more strongly confirmed, by my knowledge of the land situated east and south east of this town, a lofty and wild region, and where in hot and dry summers water can very rarely if at all be procured by the parched animals thereon. It is here, in this district, that hæmaturia rages like an epidemic, annually attacking all ages, and numbers falling victims to it; whilst in the surrounding vallies a case very rarely occurs, prevented, I have no doubt, by the animals having a sufficient quantity of pure water to resort to, when nature may prompt them. As a farther corroborative, I am well acquainted with one farm upon which, even in a moderately dry summer, water is very difficult of attainment; yet the occupier annually suffers through this disorder, whilst his immediate neighbours

are exempt, and why so? because they have, at all times and seasons, a plentiful supply of that refreshing element. I have known hæmaturia make its appearance as an epidemic upon farms where it had hitherto remained unknown, except by name, and which could be traced to no other apparent cause than an excess of draining, by which process the natural and artificial grasses became altered in quality and quantity, and would necessarily predispose to disease—in fewer words, whatever tends to derange the digestive powers must likewise involve the whole body.

It may be said, that indigestion may and does occur at all seasons without one solitary instance of hæmaturia. That this is the case is beyond doubt; but I shall content myself with briefly replying, that hæmaturia selects a portion of the year when the sun is attaining or has attained its greatest power, and that all animals labouring under visceral derangement, being continually exposed to its scorching rays, with not a tree or shrub to protect them from the intolerance of its heat, and without one drop of water to cool their parched tongues, these combined will naturally predispose to attacks of a particular kind, and these generally terminate in hæmaturia. That indigestion is the primary cause, is evident from the well-known fact of diarrhœa always preceding the discolouration of urine; and that water, even in a limited quantity, will tend to disturb the digestive powers, as well as alter the secretion of urine both in quantity and quality, must, I think, be evident to all, and clearly shews that all our means must be exerted, and strenuously too, against the stomachs and intestines. This, at least, has always been my object, and where I have been sucessful enough to clear the stomachs from their indigestible mass, I have invariably found every untoward symptom vanish. To accomplish this end, the magnes. sulph. in ℥iv doses, given in any convenient vehicle every two hours until the intestines are briskly acted upon, with a plentiful use of whey porridge, and keeping the animal in a loose cow-house, will have a more beneficial effect than all the astringents so much praised by cattle doctors, whose only aim is to "turn the water," and which they attempt to accomplish by their free, and I will venture to say injudicious, administration of these drugs, leaving to nature alone the disgorgement of the stomachs. I must not omit to state, that I generally find it necessary to administer the magnes. sulph. in ℥iv or ℥vi doses as an alterative for a few days afterwards, to which, if there exists any debility, I add pulv. colomb. ʒii, pulv. zingib. ʒi, with some of the aromatic seeds.

I cannot conclude without stating, that the disease called felon, or cold, is most decidedly indigestion; for I gradually succeed, in most cases, by the exhibition of alterative doses of the muriate

of soda, say ℥vi daily, continued for a fortnight or three weeks, even after they have totally lost their milk, and become quite emaciated. My motive in giving small doses of Epsom salts in hæmaturia is solely under the idea that I shall be better enabled thereby to relieve the manifolds from the hard and dry food contained within its leaves: and which, if we do not accomplish, death will most decidedly follow. In the post-mortem examinations which I have witnessed (from hæmaturia), the manifolds have universally presented one hard, dry mass, whilst the other stomachs have only contained fluids, and nothing to be observed about the kidneys except a morbid whiteness.

I shall conclude by stating the result of an experiment I made the day before yesterday on a cow that was going to be slaughtered: she was kept from taking any water from the night previous, and then allowed to take as much as she pleased before she was knocked down. The time which elapsed from this drinking until she was opened was perhaps 40 minutes, and sufficient for the fluid to pass its regular course, and the result was strongly in favour of what Mr. Friend advanced in the last VETERINARIAN,—the paunch was half full of food, well diluted with the liquor, and a quantity of fluid merely coloured with the food contained in it; the manifolds contained a small quantity of food, but remarkably dry, and no appearance whatever of having had any fluid near it, and the contents of the fourth stomach and small intestines were quite in a fluid state; so that it appears to me, that we can exercise our power over all the stomachs except the manifolds.

OBSERVATIONS ON AN ACUTE AFFECTION OF THE SKIN OF THE HORSE, &c.

By Mr. WILLIAM AITKEN, *V. S., Kilmarnock.*

[We have great pleasure in inserting the following essay. At the examination for his diploma, each pupil of Mr. Dick's is called on to produce an essay on a given subject. This was Mr. Aitken's; and we scarcely need say that he was successful. It contains much merit; and when a very few additional years, and the experience which they will bring, have induced Mr. Aitken to attend a little less to the *theory* of disease and the effect of medicine, *and to build his practice on observation, and on fact,* we have no doubt that he will be a shining star in our profession.]

The horse, as he is at present kept, especially in towns, may be said to live in an artificial state. Nature has apparently intended that he should subsist upon the green herbage of the field, and the water from the brook. Immense labour is, however, required from him by man; and, in order to support the great waste occasioned by the necessary actions of the body in performing the labour required, more nutritive matter must be thrown in than can be furnished in the bulky state in which provender for horses is naturally produced. The stomach, then, in order to eliminate this greater quantity of nutriment, becomes stimulated, and more liable to be affected by acrid substances or irritants.

Another evil seems to be, the heterogeneous mixtures often given in a crude state to this class of animals, which retard digestion, and also render this process incomplete, by the different degrees of digestibility of the substances forming such mixture: thus giving the stomach more to do than it can perform, and causing indigestion by the collection of crudities in the stomach and smaller intestines.

Between the internal coat of the stomach and intestines there exists a very great sympathy with the skin; and if the same pathology which applies to cutaneous diseases in the human subject will apply to horses and black cattle, it must be admitted, that from irritations of the stomach and intestines will frequently originate cutaneous eruptions in these animals also. On account of the coating of hair which has been granted to them by nature, both to ornament and protect them, there exists a great obstacle to the attaining a perfect and distinct knowledge of skin diseases; and although, generally speaking, cutaneous affections require much the same treatment in all varieties, yet whatever can tend to a more accurate diagnosis, or lead to a more perfect and definite mode of treatment for each species or variety, is not to be disregarded.

Whether affections of this kind take place principally from a sympathy propagated along from the irritated villous coat of the stomach to the delicate rete mucosum of the skin, and there producing the peculiar action which gives rise to the symptoms of an eruptive disease,—or from a vitiated state of the chylous fluid, arising from an imperfect action of the digestive apparatus,—or the use of acrid substances for food, or mixed accidentally with the food, thereby allowing an ill-concocted and irritating supply to be thrown into the circulating mass of blood, vitiating all the secretions, and breaking forth in exanthematous disease, might become matter of dispute. That all these causes, however, may act, I think is evident; and I am much disposed to believe, if

sufficient attention were paid to the manner in which the eruption takes place, the relation of its breaking forth to the time of taking food, the kind of food, and the state of the animal at the time food or drink has been given, a clue would be obtained to the mode of treatment most likely to be successful, and a character for eruptions more definitely fixed.

It appears with veterinary authors too much the practice to huddle all eruptions, except mange, under the head "surfeit," and to give as exciting causes of surfeit whatever variations in diet, temperature, or stable management, the animal may be exposed to; and, as is usual, having once obtained a name for a disease, the remedy is easily applied, as one remedy generally is esteemed sufficient to effect a cure.

This bears absurdity on the very face of it; for eruptive diseases, apparently of the same kind, may be acute or chronic, and may be rendered so from exciting causes entirely different. We ought not, therefore, to use the same remedial means in an acute case that we would in a chronic one, if from the exciting cause an indication completely different should occur, and *vice versâ*.

There is a cutaneous disease in the horse, that I have observed to take place, which very much resembles an acute attack of nettle-rash in the human subject, and seems equally fleeting. The animal, after having eaten a particular kind of food, either of itself acrid or rendered so by preparation, or having eaten of its ordinary food with an accidental admixture of an irritating substance; or, after being out on duty, having been fed immediately on its return, will soon appear dull, and give signs of itching. The skin, when the hand is drawn over it, feels studded with small raised or swelled circular patches, varying in size from the diameter of a split pea to that of a shilling: the lips and eyelids are swelled, the mouth feels hot, and the animal appears to suffer severely from itching over those parts of the body where the eruption is most prominent.

From what I have witnessed of this disease, I am much disposed to regard it as wholly arising from gastric irritation. For example, an animal may be taken out apparently in perfect health, its coat sleek and soft; it may be ridden into the country a few miles, and there get a feed of beans, or a mixture of beans and corn, and then a drink of water immediately before its return, or on its way home: soon after it has been put into the stable it will probably exhibit symptoms of uneasiness; appear dull and itchy; and have all the symptoms above described. The above case required a previous excitement before the food was given; the horse had water while hot, and was ridden immediately afterwards: all these causes co-operating. In some horses,

again, an eruption of this kind will break out soon after the animal has partaken of mow-burnt hay, dried beans, or any other kind of provender which may have become altered from its natural condition by a chemical process.

Above I have stated my reasons for believing that eruptive diseases may be either the immediate result of an irritation of the internal membrane of the stomach, or caused by a vitiation of the chylous fluid. I think, however, that it is evident that the former, viz. irritation of the villous coat of the stomach, propagated along to the rete mucosum, is the common cause of the acute affection to which I have alluded, inasmuch as the eruption appears so immediately after the exciting cause that time sufficient to admit of its acting through vitiation of the fluids has not been allowed to intervene.

This seems to be proved by the effects that some indigestible and acrid substances, or even the most common substances under particular circumstances, have upon human subjects of a peculiar idiosyncrasy. I have known the eating of half a dozen of unripe gooseberries, or a small quantity of unripe fruit of any kind, produce, almost immediately, a very severe erythematous attack, attended with a most harassing itching over the whole body. A draught of cold water, taken when the body was heated, has also produced erythema; and in some individuals, spirits, dried beans and pease, nuts, raw rice, &c. have a similar effect. On the other hand, irritants applied immediately to the rete mucosum itself give rise to symptoms completely resembling the effects produced by acrids taken into the stomach. The sting of a honey-bee upon the face has been followed with an acute attack of nettle-rash; and it is well enough known, that in bilious subjects a leech-bite, a prick with a pin, or any irritating scratch, will be followed by erysipelas. From these facts I would say, that it is demonstrable that this complaint resides in an irritability of the stomach, and the sympathy existing between it and the skin.

The indication of cure for the removal of such an eruption as that mentioned above, is necessarily the removal of the irritability, or the cause of the irritation.

The class of animals to which my attention is directed live wholly upon vegetables, which require much more time to digest, and are much more apt to run into fermentation, than animal diet. From the greater length of time required to digest vegetables, and the tendency to acetous fermentation which exists, a natural remedy seems to be alkaline medicines, given in such quantity as shall neutralize the acid produced; or tonics, or antacids, given with the food, to prevent it from running into

fermentation. When, however, the eruption has broken out, on account of indigestible matters lodged in the stomach or smaller intestines, a dose of purgative medicine to clear them out, followed by a tonic or alkaline medicine, or both combined, will generally prove successful. There appears, also, to be a necessity, in order to prevent a retrocession of the eruption, that the animal be kept warm by clothing; but where proper precautions are taken, and a little medicine has been given beforehand, the itching will be much relieved, and the eruption more readily got rid of by the use of an evaporating lotion, and rendered so by the addition of a small proportion of alcohol, and this applied, with a sponge, over the parts. Great care should be taken to prevent the animal from tearing himself with his teeth, or from rubbing against his stall, as this might be continued till the skin was broken, and the hair torn off from the erythematic patch, rendering the disease both loathsome and mangy in appearance, and producing small ulcers, difficult to cure.

When there seems a tendency in the complaint to become chronic, the use of a laxative, combined with carb. potassæ, carb. sodæ; or, if a stimulant seem to be required, the aq. ammoniæ, will in all likelihood prove very serviceable.

Veterinarians have been much in the habit of using, in diseases of the skin, a combination of antimony, sulphur, and nitre; and where there seems to be a confirmed cutaneous affection, with a dry coat, and little apparent derangement of the digestive organs, it certainly is useful. It is, however, a remedy used very empirically, and appears to be too much the panacea of the stable, as it is given in chronic complaints indiscriminately, and must therefore prove, if not sometimes injurious, at least abortive of the end intended.

It is very evident, from the foregoing sketch, that, if an animal has been once observed to be seized with this kind of eruption, a little care and attention afterwards will do much to prevent a return of it. Observations on diet, carefully made, will always be of use; and much attention ought to be paid to the condition of the animal at the time he is fed, or has water given, and the temperature of the water. If a horse is heated by exercise, and has cold water given to him, it must produce a chill, and this, after a short time, will be succeeded by reaction. Water, in summer, should not be given as drawn from the well; in winter there is little hazard in doing so, because the temperature of the water is higher then, or as high as the surrounding air, and the horse is in a much less irritable or sensible state to be chilled from such a cause. The skin ought to be kept clean, by daily brushing, so that all dandriff be got rid of, and the pores kept clean.

If such efforts as these be not made with an animal shewing a tendency to such an eruption, one of a chronic character may be expected, and will require for its removal treatment differing considerably from that recommended above.

PERICARDITIS, AND GENERAL THORACIC AFFECTION,

PRODUCED BY A PIN PENETRATING THE PERICARDIUM, AND WOUNDING THE HEART.

By Mr. George Horsefield, *V. S., Wentworth.*

I have been a subscriber to The Veterinarian ever since its commencement, and find in it much useful matter; and am glad it is going on prosperously, admirably displaying our present state of physiological and pathological veterinary knowledge: and as something is expected from, and ought to be furnished by, country readers, I transmit the following case of thoracic disease. My patient was a large fat heifer, 4 years old, the property of Earl Fitzwilliam, of Wentworth, Yorkshire. On the 8th of June, 1829, I found her labouring under disease, and manifesting the following symptoms: a dull countenance, quick respiration, an accelerated yet intermitting pulse; cold extremities; no rumination, nor appetite; bowels open. I abstracted seven quarts of blood, and gave digitalis ʒii, tart. emetic ʒii, potass. nit. ℥iss, and left her in a well-ventilated loose place.

On the 9th she was no better; the pulse still quick and intermitting, appetite deficient, no rumination; extremities cold: she lies down seldom, and, when down, the nose is protruded. I again took away seven quarts of blood from a large orifice, and gave the sedative as before, and drenched her with gruel.

On the morning of the 10th she was no better, and, the bowels being rather inactive, I gave sulphate of soda ℥vi, ol. lini ʒvi. In the evening she drank half a pailful of white water, and ate a little bran mash; the bowels were gently open, but there was no rumination.

On the 11th, all the symptoms as on the 9th.

On applying my ear to one side of the chest, and using percussion on the other, undulations were heard; and on considering the quick and intermitting pulse, and the hurried respiration, with effusion in the chest, I gave up all hope of a cure, ceased from medicine, and had her destroyed.

Post-mortem Examination.—On cutting through the sternum, there flowed from the chest no less than three gallons of serous fluid, very offensive. On piercing the pericardium, which was

distended with the same, the edge of the knife came in contact with a brass pin, two inches long, and weighing 30 grains; the same which I have sent you. On putting in my hand, I found that the pin had pierced through the parietes of the pericardium, which was much thickened, and altered in structure. The point of the pin had wounded the apex of the heart, which was much enlarged. The lungs, and the walls of the chest, bore evident marks of inflammation, and its consequences.

A CASE OF BRONCHITIS, WITH EFFUSION,

SUCCESSFULLY TREATED WITH DIGITALIS.

By Mr. M. E. Naylor, *V. S., Wakefield.*

March 11*th.*—I was called in to see a horse, the property of a gentleman in this town, that was labouring under a severe attack of bronchitis; his pulse was 85, and the breathing difficult, and there was cough, but not very troublesome. On having recourse to auscultation, there was considerable rattling in the air-passages. On inquiry, it appeared that he had been sometime prior to this attacked with diarrhœa, which had recommenced a few days previous to the present affection. On the 8th he had shewn some difficulty in voiding his urine, for which the groom had administered a diuretic; but on the 9th, not seeming better, the smith was sent for, who bled him to the amount of ℔xii, and gave him antim. tart. ʒii, in a ball, with honey and linseed meal. In the evening he appeared much better, and was not seen by the smith until the 11th, Monday morning, when he was found to be so much worse, that he said they had better call in a regular practitioner, and accordingly I was sent for.

I immediately abstracted from 10 to 11 lbs. of blood, and ordered pulv. digitalis ʒss, antim. tart. ʒiss, nit. pot. ʒii, to be given three times a-day; and that they should throw up frequent enemas of linseed tea, and gruel. In the evening he was much the same; and I blistered the course of the trachea, and put a rowel in the chest. He was in an airy two-stall stable, from which I requested that the other horse might be removed as soon as convenient.

12*th.*—This morning there was no improvement: the pulse 80, full and sharp: V.S. ℔iii; he could not bear the loss of more. I increased the digitalis to ʒi three times a-day; and threw up enemas as before.

13*th and* 14*th.*—The same course of treatment was pursued, with but very little alteration in his symptoms, except that the

cough, which had quite left him; he was gradually getting weaker.

15*th*, 6 A.M.—I thought there was a slight intermitting in the pulse; it was evidently weaker, and not so frequent. The animal much nauseated. I omitted the medicine. When I saw him at noon, the intermittence was more clear: I gave him enemas of good gruel, well boiled. In the evening the actual pulsations were but 42 in a minute. The animal's debility seemed to gain ground rapidly; he threw off the enemas as soon as they were administered.

16*th*.—His breathing is clear, and the inflammatory action has disappeared. His pulse is now 64; but his disinclination to take any support is such, and has remained so long, that I deemed it necessary to give him some food. About a quart of gruel, with one drachm of ginger (as a stomachic), was horned down twice in the course of the morning. At 7 P.M. he had eaten a handful of grass: pulse much the same.

17*th*.—There was scarcely any alteration. His pulse beats smarter, and was rather on the rise. I feared hydrothorax, and gave digitalis ℈i, with potas. nit. ʒiii twice in the day.

18*th*.—Treatment the same.

19*th*.—I was confident there was effusion into the chest: his breathing was accelerated and performed by jerks; his pulse higher, 70; and he refused his food. I administered ℥i of the fever mass (digitalis, emetic tartar, and nitre) with ʒi of chamomile.

20*th*.—He ate small portions of grass, hay, and linseed mash. His breathing was much more difficult, and of the character we generally meet with in hydrothorax: the intercostal muscles in constant action; pulse 78, and struck my finger smartly, denoting the labour the heart was performing. About 2 o'clock he fell down, and with some difficulty was got on his feet again, for he could not bear to lie down.

In this state he remained, with but very slight alteration, until the 22d, when he seemed to improve a little, his pulse having fallen to 68, and other symptoms more favourable; the medicine was continued three times a-day, which kept up a slight action on the kidneys.

23*d* and 24*th*.—No alteration made in his treatment, under which he seems to do well: his breathing is tranquil, and to all appearance easy; the pulse has fallen to 46, but retains too much the character which denotes the presence of water in the thoracic cavity.

25*th*.—I now determined to give small doses of the chamomile, with the fever mass, and slight diuretic medicine, alter-

nately; and in this manner he was treated until the 30th, when he was left to the care of the groom, with a healthy respiration, and pulse at the natural standard.

I submit this, Gentlemen, to your remarks. I myself have reflected upon it, and the result seems to me to shew the advantage of the digitalis, in these cases, over every other medicine. Had I given the aloes in small doses, or the hellebore, I think I should have lost my patient; with the former, by hypocatharsis; and, with the other, from debility, arising from the unconquerable nausea induced: but here, as may be seen frequently in practice, the digitalis had the desired effect upon the heart; and, after the inflammatory action had subsided, gentle tonics, it seems, may be given, without producing any bad effects; and still further benefit may be derived from them in cases of effusion, when that does not arise from primary pleuritic affections; and even in that case it is a question whether or not gentle tonics, together with fever medicine, and a small portion of diuretic, would not be of service.

A CASE OF DANGEROUS ENLARGEMENT OF THE PAROTID GLANDS,

SUCCESSFULLY TREATED BY FRICTION WITH IODINE.

By Mr. Charles May, *V. S., Maldon.*

On the 6th July, 1832, I was requested to see a mare, belonging to Mr. Q——n, of Little Totham, about four miles from this place. When I arrived, I found my patient (a little blood mare, with a foal at foot) in great distress, being scarcely able to breathe, and her countenance giving indication of most acute suffering; the cause of which I found to be enlargement of both the parotid glands, and to such an extent, that the trachea was completely pushed out of its natural position, and so distorted, that there was scarcely room left for any air to pass. In order to afford as immediate relief as possible, I performed the operation of tracheotomy, leaving a canula in the trachea. Her breathing soon became tranquil; the anxious expression left her countenance, and she seemed desirous of food, but unable to swallow any thing solid, in consequence of the pressure of the enlarged glands upon the esophagus; I therefore ordered her gruel and mashes. Upon inquiry, I found that the glands had been gradually enlarging for some months, and that, as they enlarged, they had become hard. They had been frequently blistered, but without any beneficial effect.

Having succeeded in abating the more urgent symptoms, I now directed my attention to the reduction of the glands, and,

thinking it a fair case for the trial of iodine, I determined upon using it; but the difficulty of swallowing preventing me from giving it internally, I depended upon its external application in the following form: tr. iodine ʒi, lin. saponis ℥ii, to be rubbed in twice a-day.

8th.—Mare looking much better; has eaten some green clover; breathing much improved; the glands, I think, feel somewhat softer: continue the linament.

12th.—The mare is much improved in appearance, and breathes without difficulty. Thinking she could now breathe without the canula, I took it out, and closed the opening with my fingers. The breathing became oppressed, and the anxiety of countenance returned: I therefore replaced the canula, and ordered tr. iodine ℥ii, c. lin. sapon. ℥ii, to be applied as before.

16th.—The glands have become softer, and much reduced in size. I again removed the canula, and found that the mare breathed without difficulty: the wound to be daily dressed with sol. chlo. calcis., and the glands embrocated as before.

From this time my patient rapidly improved in condition, and the glands soon regained their natural size and appearance. The mare has since been engaged in fast work, which she performs without any apparent inconvenience.

A CASE OF SWELLING, AND INDURATION OF THE UDDER OF A COW;

SUCCESSFULLY TREATED IN THE SAME MANNER.

By Mr. Charles May, *V. S., Maldon.*

The next subject upon which I tried iodine was a milch cow, the property of Mr. Bryant, of Woodham Mortimer, near this place. The owner informed me, that she had had a large hard swelling in her bag for more than a twelvemonth, which had increased of late, and that she had lost the milk from one quarter.

When I saw her, I found the udder on the right side very much enlarged, and hard; she also expressed pain upon pressure. I ordered tinct. iodine ℥ii, lin. sapon. ℥ii, to be well rubbed on the part twice a-day. This treatment was continued for about three weeks; the swelling gradually became reduced, and the secretion of milk much more abundant, and it returned to the quarter which had become dry.

Iodine has had but little trial in veterinary practice. I do not remember to have heard it even named by either of the Professors at the Veterinary College; it promises, however, to be a valuable addition to our pharmacopeia, and especially when we have these glandular enlargements to contend with.

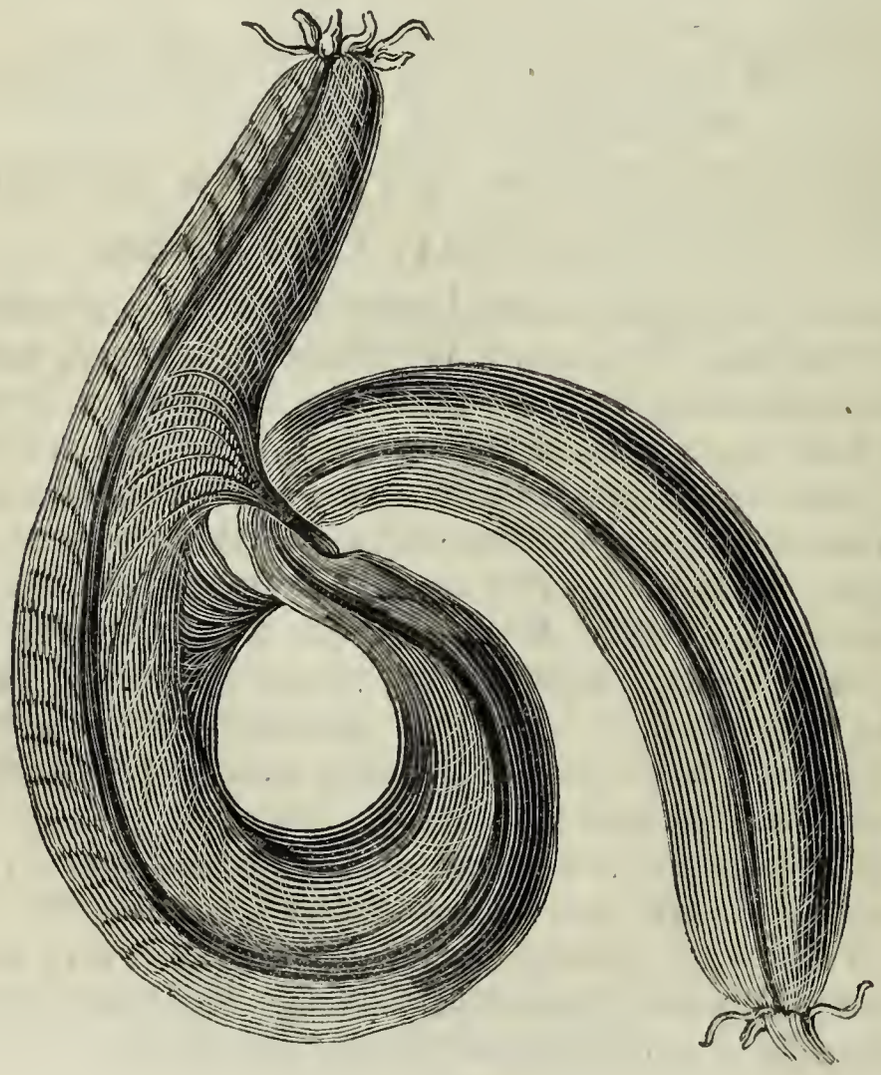
A CASE OF STRANGULATION OF THE RECTUM.

By Mr. F. Fuller, *V. S., March, Cambridgeshire.*

On the 3d inst. I was requested to attend a coach-horse, the property of the Rev. A. Peytons: the groom who came for me told me the old horse had been bad all night, with his old complaint, *the gripes.* The coachman had bled him, and given him ℥iv spirit terebinth., with some castor oil, and raked him before I saw him, which was about noon. I found him labouring under acute enteritis; pulse 110; the membrane of the eyes and nose highly inflamed; mouth particularly hot and dry; breath very offensive; extremities and ears cold; shivering, with cold sweats. After giving my opinion, the horse was ordered to be shot immediately.

Post-mortem Examination.—Upon opening the abdomen the bowels presented a very high inflammatory appearance, particularly about the colon and rectum. At about four or five feet from the anus there was a complete strangulation of the rectum, formed by a ligamentous band, which completely intercepted all passage.

I have herewith sent you a rough sketch of the strangulated part.



ON ABDOMINAL DISEASE IN THE OX AND THE HORSE.

Having once made a start, anxiety to relieve myself of another portion of the obligation which I feel has been the cause of my resuming my pen thus early; for, really, the more I think of it, the greater the obligation appears which myself, and (doubtless) many others of your readers, lie under: nay, I may say the whole profession; for you have, by catering for all, deserved the thanks of all (even though some viands of your provision have not been palatable to every one who has tasted thereof, and though there may be some who, having partaken to satiety from other sources, have not needed your supply); and I trust many who have, like myself, during the last five years, imbibed knowledge from the stock of others, will, for conscience sake, turn to in earnest, and, by inundating you with matter, oblige you to publish a weekly number, or a much larger one monthly. I shall now send you some more of my unusual cases, call them what you like; and believe me to be, your obliged well-wisher,

A Veterinary Surgeon.

CASE I.

Inflammation of the Mucous Membrane of the Intestines of an Ox.

A yearling bullock, in good condition, was observed to be amiss, and purging, but still continued to feed with the herd. He was taken to house, and within two days had 1½ lb. of Glauber's salt given, under the idea that he had a "stoppage of the fardel bag." I was then consulted, and sent cordial tonic medicine, directing that he should have gruel given to him at intervals, and that he should be kept quiet. Two days afterwards I was requested to see him, when he discharged yellow liquid and mucus, but no dung. The pulse was quick, but no other appearance of fever, nor any pain: he lies down continually; when raised, walks very weakly; was observed to stale freely; will not eat, but drinks a little cold water. He continued about the same, without any visible effect from the medicines prescribed, until the eighth day, when he died. I saw him opened on the next morning. The heart was much inflamed and tender; liver externally brown, internally of a bright yellow, with a spongy appearance throughout; gall-bladder distended with bile of the consistence of treacle; the paunch and fardel bag, or third stomach, full, but without any appearance of disease; the bowels curiously

streaked internally, of different shades, from a slight redness to deep purple: no discolouration of fat, skin, or membranes, as in jaundice.

CASE II.

Inflammation of the Mucous Membrane of the Intestines of an Ox.

Nov. 9th, 1831.—I was called in to a three-year old bullock: that was observed to purge and look thin the day before, but was not taken from pasture till night. He did not appear to suffer any pain or difficulty in breathing; the pulse was very quick; the mouth was moist: he was generally warm; no discolouration of the conjunctival membrane; he would not eat any thing: the dung was very loose, of its natural colour, and with it was discharged a great deal of mucus.

10th.—Heard that he continued much the same.

11th.—Continued without any material alteration, but discharges mucus in large quantities, very offensive, and without any dung.

12th.—Still the same; the discharge not so much, but consisting of mucus only: has been observed to stale a small quantity, and the urine was of a pale colour.

13th.—Discharges more from the bowels; seems more lively.

14th.—Died.

Of the treatment of this case I shall only say, that he was bled, although not to the extent directed; that he had purging medicine, blistering ointment applied to the abdomen, linseed gruel, &c.

On examination, on the 15th, I found the lungs gorged with blood; heart and pericardium much discoloured, particularly the latter; the liver small, of a pale yellow colour, and very tender; the gall-bladder full of thick bile; the spleen small, and more pale than common; the kidneys in a state of disorganization externally, and the membranes quite destroyed; the paunch full, as was also the third stomach; the contents of the latter dry; the veins distended, causing discolouration; the bowels discoloured externally; the mucous membrane in parts disorganized (not ulcerated); in other parts thickened and streaked with red, particularly the rectum: no discolouration of the white parts. This patient was quite fat internally. I have said, call these cases what you like; and perhaps the less I say farther about them, the better; therefore I will proceed in the filling up of my paper with two cases of abdominal disease in horses.

CASE III.

Old Pony Mare.

May 1st, 1832, 9 A. M.—I was called in to an aged pony mare, that was found in her pasture, the evening before, rolling about and turning on her back, as though affected with spasm of the bowels, but which went off in the course of the night, without any thing being done for her. I found her standing quite listless; the pulse not to be counted at the heart, where only it was to be felt: she was discharging dung, very loose, offensive, and made nearly black by admixture with blood, containing also vast numbers of very minute worms, which I occasionally meet with (though I have not read of them in our books), distinguished from other kinds by their movements. I gave no hope of recovery, but, as she was a great favourite, a wish was expressed that some means should be tried; I therefore directed that she should be very warmly clothed, that oil of turpentine should be applied all over the abdomen, and over that a fresh sheepskin; and that a mild dose of physic should be given, and gruel.

On the next morning she died, without any return of pain.

On examination soon after I found the lungs somewhat diseased; the liver exhibited marks of former disease; the bowels, particularly the larger ones, were very much thickened, and black from congestion and inflammation. The contents were of the same nature as what was discharged yesterday, with an uncommon quantity of the worms. I have met with many cases which, after death, shewed the same affection of the bowels, but never before the discharge of blood, and they have always died in a few hours, mostly in three or four; but the discharge of blood caused this exception probably, and which supposition is strengthened by the following case.

CASE IV.

Old Mare.

July 7th, 1832.—A cart mare (aged), in good condition, was attacked on a journey (after travelling ten miles, to all appearance well), with symptoms of gripes, and was brought on with the other horses four miles. She was with difficulty kept on her legs while I attempted the counting of her pulse, which was scarcely perceptible. I opened a vein, and applied a ligature, but by the time I had taken three pounds of blood she began to reel; I therefore loosened the string, and had her taken into

a field of grass, close by, when she lay down, and continued to roll for some minutes; when I again tightened the ligature, and drew 3 or 4 lbs. of blood. Her pulse was now quite lost, and such was her appearance altogether, that I considered a dose of medicine would be thrown away, and therefore only gave her at intervals, with a horn, three or four quarts of (quite warm) water. After almost incessant rolling for half an hour, she became easy, and lay at her length for some time, almost without breathing, and without any pulse at the jaw; yet she retained some degree of warmth all over. At length I got her up, and placed her in a shed, that was tolerably warm, covered her warmly, and had hay-bands applied to her legs. I gave her a mild dose of Barb. aloes in solution, and clystered her with warm water, which brought away a great deal of very offensive dung, but which, on account of the darkness of the night, was not examined.

8th, 6 A.M.—Continues easy and warm generally; and can scarcely feel a pulsation. I bled to 4 lbs., and gave a mild dose of aloes, camphor, &c. 11 A. M. Still warm, but no pulse; discharges blood, mixed with the dung, after being clystered. She drinks warm water, and would eat if allowed. I bled to 7 lbs. 10 P.M. Still the same; bled to 4 lbs.; and gave aloes Barb. ʒi, camphor ʒi.

9th, 7 A.M.—Pulse still indistinct; bled to 6 lb. Bowels relaxed. 10 P. M. Pulse more distinct, but cannot count it; bled to 5 lb.; and gave another small dose of aloes, camphor, &c. Drinks water freely; and I allowed her a little grass.

10th.—Appears better; pulse continues to become more distinct; drinks very freely, and had grass and bran mash. 10 P.M. Bled to 4 lb.; bowels relaxed, but not resembling the effects of medicine, the discharge seeming to consist of indigested food: feeds moderately on grass.

She continued to improve, but I could not distinctly count the pulse at the jaw till the 17th (before which she had taken a dose or two of tonic medicine), when it was tolerably regular, and about 60, at which time she was sent for home, a distance of nine miles, and, I have been informed, did well.

In this case there was evidently congestion to a great extent, and which, by the repeated bleedings, &c., was remedied without inflammation taking place. Almost the only favourable symptom, from the first, was warmth, and that without a due circulation of blood. On drawing her tongue out of her mouth the first evening, she did not retract it, but appeared quite listless. Her tongue was always moist, and yet she was very thirsty during all the time she was with me.

THE VETERINARIAN, MAY 1, 1833.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

ON THE EXTERNAL CAUSES OF DISEASE.

[Aerial Poisons, &c. continued from page 135.]

We concluded our last paper by stating "that the blood was possessed of vital properties, and that, in all diseases arising from aërial poisons, it was contaminated." The vital properties of the blood were suspected by Hippocrates: Harvey and Hunter firmly believed and taught it; and on considering the subject, it does appear extraordinary that the vitality of the fluid part of an animal body, which constitutes about five-sixths* of its weight, should ever have been doubted, much less denied.

The liquids constitute not only the greatest part of the body, but they actually existed before the solids were in being, as the embryo, which is at first in a gelatinous state, may be considered as a fluid.

Again; the solids are not only formed from the liquids, but it is by the latter that all the organs receive their nourishment, and repair their waste.

"The blood the fountain whence the spirits flow,
The generous stream that waters every part,
And motion, vigour, and warm life conveys,
To every particle that moves or lives."

Again; the solid matter of which a living body is composed is in a state of continual change; old and worn out particles are every moment taken up from their station, and carried out of the system, and new particles are every moment conveyed to the place occupied by the old and deposited in their room: thus, solidity may be considered as only existing in a transient state, or, as Richerand expresses it, "an accidental state of organized living matter," since the solids formed from the liquids return to their former state, when, having for a sufficient length of time

* Richerand.

formed a part of the animal, they become decomposed by the nutritive process.

Our ideas of life have generally been so much connected with organic bodies, and principally those endowed with visible action, that it requires a new bend to the mind to make it conceive that the circumstances are inseparable. Mr. Hunter alleges, that in the nature of things there is not a more intimate connection between life and a solid, than between life and a fluid. For although we are more accustomed to connect it with the one than the other, yet the only real difference which can be shewn between a solid and a fluid is, that the particles of the one are less moveable among themselves than those of the other.

An argument produced by Mr. Hunter to prove that the blood, in common with the solid parts, is possessed of what he calls the "*materia vitæ diffusa*," is that the blood becomes vascular like other living parts*. This is very commonly seen after amputations, when the coagula on the extremities of arteries may be injected by injecting these arteries. Mr. Hunter considered it also as a strong proof of the blood being alive, that when taken from the arm in the most intense cold which the human body can bear, it raises the thermometer to the same height as blood taken in the most sultry heat, as living bodies alone have the power of resisting great degrees of heat and cold, and preserving in every situation, while in health, that uniform temperature which is distinguished by the name of animal heat. It is also capable of being acted upon by a stimulus. In proof of this, Mr. Hunter observes, that it coagulates from exposure, as certainly as the cavities of the abdomen and thorax inflame from the same causes. "The more it is *alive*," he says, "that is, the more the animal is in health, it coagulates the sooner on exposure; and the more it has lost its living principle, as in the case of violent inflammations, the less is it sensible to the stimulus produced from its being exposed, and it coagulates the later."

* Sir E. Home has explained the manner in which this is produced in the "Philosophical Transactions;" accompanied with some beautifully executed engravings, shewing the new-formed vessels rising from the centre of what had been a coagulum of blood, and opening into the stream of the circulating fluid.

Mr. Vines, the demonstrator of the Veterinary College, has explained this in a much abler manner. "When an animal is in possession of the highest possible degree of health and strength, and performing moderate exertion, the muscles are of a bright red colour; and if blood be drawn, it will quickly coagulate into a solid red mass, and give out a small quantity of serum; whilst on the contrary, if the same animal be exposed to severe cold, and supplied only with little food, the blood will be found to coagulate much more slowly, and to separate into two parts—white and dark blood, constituting what is called buffy or inflamed blood; and in proportion to the intensity of the cold, and deprivation of food, so will the blood assume the buffy appearance."

Thus the different colours of the blood indicate its various degrees of vitality; for, in animals possessing health and strength, it appears red from possessing a high degree of vitality; while in those where the systems are unhealthy and debilitated, it is white, from having a less degree of vital power.

Here, also, we shall find, on investigation, a fruitful source for the causes of many diseases, according to the changes which the blood may undergo as to its composition.

This leads us to the second part of our subject, "*that, in all diseases arising from aërial poison, the blood is contaminated.*"

It is a well known fact, that putrid animal and vegetable matter is capable of communicating to the air a poisonous quality, which gives a tendency to living bodies to assume certain forms of disease. In all those diseases the blood is more or less empoisoned. This empoisoning may take place in two different ways. The aërial poison may either be imbibed by the absorbent vessels on the surface of the skin, or it may be attracted immediately into the circulatory current, along with the atmospheric air in the lungs. In either instance it must sooner or later enter into the circulation, and derange the physical properties of the blood. And in both instances, the air is the medium through which the poison is communicated; as it has been repeatedly proved, particularly by Dr. Barry, with a variety of poisons, on the surface of the skins of several species of animals, that, when the pressure

of the atmosphere was removed, the poison was not absorbed.

Here, then, we have two subjects of inquiry :—

1*st*. The mode and channel by which aërial poison is imbibed by the absorbent vessels on the surfaces of the body.

2*d*. The mode and channel by which it is attracted into the circulating current with the atmospheric air in the lungs.

With respect to the first question, it will not be necessary to enlarge on it, as Mr. Vines will no doubt explain that process in THE VETERINARIAN, in the continuation of his "Series of Essays on the Bloodvessels and Absorbents." And, as it regards the second mode, we will endeavour to explain it as well as we are able.

Healthy arterial blood contains a portion of pure air (not oxygen alone, as is generally taught), which it receives in the lungs, and this is diffused in the other ingredients which enter the circulation through the medium of the thoracic duct.

Pure air is necessary for all the purposes of life. The blood requires it in a pure state, as much as the stomach requires proper and nutritious food; or, in other words, the qualities of the air must be suited to the condition of the vital power in the lungs, as those of the food to the sensibility of the stomach. If the contrary takes place, disease in either instance must be the consequence.

This will lead us briefly to consider the phenomena of respiration.

By the action of the atmospheric air, the blood, which has been rendered impure and black in the extreme circulation, undergoes a remarkable change in the lungs, being converted into scarlet or arterial blood;—

> "Its rosy beauty gone;
> Poor by expense, and pains with labour grown,
> Is in the lungs enrich'd; which reinspire
> The languid liquors, and restore their fire."

By the influence of the atmospheric air, the blood is fitted for all the functions of life; and it is a physiological fact, that, if the air is deprived of any of its constituent parts, the secretions become altered, and many of the functions, especially those of the

brain, entirely suspended. The arterial blood is no less connected with the irritability of the muscles and the sensibility of the nerves, than with the performance of all the secretions.

The atmospheric air is composed, by measure, of about twenty-one per cent. of oxygen, the remainder being azote or nitrogen; about one per cent., in the driest weather, of aqueous vapour, and about the thousandth part of the whole being carbonic acid gas. And this proportion exists, except in places where a number of living beings are confined, in which the air cannot be easily renewed, over the whole surface of the globe, whether on sea or land, on the tops of mountains, or on the lowest valleys:—whether at the equator or the poles, the proportion of oxygen and nitrogen remains the same.

All other aërial mixtures and gases are, in a shorter or longer time, destructive of animal life. Some cannot be respired at all; others again can be respired for a short time; but life cannot be long sustained by breathing any air but the mixture which constitutes the atmosphere.

> "This thin, this soft contexture of the air
> Shews the wise Author's providential care,
> Who did the wondrous structure so contrive,
> That it might life to breathing creatures give;
> Might reinspire, and make the circling mass
> Through all its winding channels fit to pass.
> Else the tir'd heart had strove with fruitless pain
> To push the lazy tide along the vein."

Oxygen, azote, and carbonic acid gases, breathed without any admixture, are speedily fatal to life. Every one has heard of the destructive effects upon dogs, consequent upon these animals breathing the air of the *Grotto del Cani;* and that faintness or suspended animation is speedily produced by holding the head over the fermenting vats of brewers.

We have often witnessed the effects of the deleterious gases that issue from the chimneys of smelting works on the feathered tribe of the creation, when they fly within the influence of its poisonous vapours: their little wings quiver like aspen leaves—their drooping heads shew that strength and energy

are past—and, as if struck by an arrow to the heart, down they fall motionless at our feet.

We have also witnessed its effects on quadrupeds, of which we shall speak by and by.

It is only within the last forty years that we have been able to investigate, with any degree of precision, the phenomena of respiration. That the blood sustained many changes, was observed by Harvey; but his discoveries were incomplete, until connected with those of *Priestly* and *Lavoisier;* and it is not a matter of surprise that there are still several questions relating to it yet imperfectly understood.

"Causa latet, vis est notissima."

The cause is hid from our view, but the effect is known;—

"It is ever present,—ever active,—ever seen."

The wonders of the animal frame are beyond our ken, and they prove daily that "there are more things in Heaven and Earth than are dreamt of in our philosophy."

"Ye skilful masters of Machaon's race,
Who Nature's mazy intricacies trace,
And to sublimer spheres of knowledge rise
By *manag'd fire* and *late-invented eyes*,
Tell, how your search has here eluded been."

At present philosophers have agreed only on two points:—first, the disappearance of a portion of oxygen;—second, the production of carbonic acid gas. Respecting the vivifying principle that the blood receives from the atmospheric air, they are likewise agreed on; but a great difference of opinion exists respecting the disappearance of the oxygen, and the manner in which the carbonic acid gas is formed:—

"Who shall decide when doctors disagree?"

"Let us, howe'er, the theme as far pursue,
As learn'd observers know, or think they do."

The commonly received and popular theory is, that the oxygen of the atmosphere enters through the air-cells of the lungs, into contact with the blood in the pulmonary vessels, unites with

the carbon of this fluid, and thus forms carbonic acid gas. According to this view, not a particle of the inhaled air is absorbed by the blood, and the office of the lungs is supposed to be simply that of receiving the atmospheric air, and expiring carbonic acid gas. With respect to the nitrogen, which forms the other constituent part of the atmosphere, as it was returned exactly in the same state and quantity as it was inhaled, it was supposed to have little influence on the animal economy.

The reader will perceive that we have taken a different view of the subject. For, from the experiments of Dr. Edwards and others, we are led to believe that a part of the atmospheric air enters directly into the circulatory current. "The *oxygen*," he says, "which disappears in the respiration of atmospheric air, is wholly absorbed. It is afterwards conveyed wholly or in part into the blood. It is replaced by exhaled carbonic acid, which proceeds wholly or in part from that which is contained in the mass of the blood.

The *absorbed azote* is replaced by exhaled azote, which proceeds wholly or in part from the blood."

According to this view, respiration is not a purely chemical process, a simple combustion in the lungs, in which the oxygen of the inspired air unites with the carbon of the blood, to form carbonic acid to be expelled; but a function composed of several acts. On the one hand, there are absorption and exhalation, attributes of all living beings; on the other, the intervention of the two constituents of atmospheric air,—oxygen and nitrogen.

It would exceed the limits of our paper to follow the doctor in the different experiments by which he arrived at these conclusions; we must, therefore, refer our readers to the work itself: but the following detail of experiments is too interesting, in this point of view, to be omitted here.

"Three puppies, a day or two old, were introduced into separate vessels, containing 150 centilitres, or 91-5 cubic inches of air. They remained there five hours. During the experiment it was evident that there was an absorption of air; for the mercury rose in the tube, and it was necessary to pour a fresh supply into the vessel in which it was immersed. It was evident that the absorption was considerable, but the exact measure of it could not be ascertained. From the analysis of the respired air, it appeared that the three puppies had produced nearly the same quantity of carbonic acid,

of which the mean was 17·86 centilitres, or about 10·90 cubic inches; and that the absorption, likewise nearly the same in all, was on an average 9·30 centil., or 5·67 cubic inches, and that it was at the expense of the oxygen. We shall now see what light this first experiment throws on the nature of the gas absorbed. Is it pure oxygen, or carbonic acid, which mixes with the air during respiration; or, lastly, a mixture of both? We shall, for the present, suppose, that the two first hypotheses only are possible; we shall afterwards examine the last.

In the early stages of the experiment, when the respiration begins, there is scarcely any carbonic acid in the vessel; but the quantity increases as the experiment proceeds. If, therefore, it is this gas which is absorbed, the absorption will be scarcely sensible at first, will go on increasing, and be at its maximum at the end of the experiment. On the other hand, if it be oxygen, the reverse will take place, since its proportion is largest at the commencement, and diminishes progressively. Now, the following are the phenomena presented in the experiment. As soon as the animals are introduced, scarcely any of the expansion of the air which must necessarily take place from the rise of temperature, is indicated by the mercury in the tube; whence it results that absorption takes place from the beginning, and, consequently, that it is the oxygen which is absorbed. In confirmation of this we may observe, that when the absorption is evident by the ascension of the mercury in the tube, it is more rapid at the beginning than towards the conclusion of the experiment. Three puppies, like the preceding, were placed in the same conditions as in the first series of experiments; but instead of remaining five hours they remained only two. The average quantity of carbonic acid produced was 14·86 centil., or 9 cubic inches, and 7 centil., or 4·27 cubic inches of gas absorbed. In this instance the gas absorbed was rather less than half the carbonic acid produced, and in the former rather more than half. We see from this how little influence the lengthened confinement of these animals in air containing a pretty large proportion of carbonic acid, had on the proportion between the two quantities, whence it is evident that the gas absorbed is principally oxygen. Three very young cabias, or guinea-pigs, were subjected to the same kind of experiment for one hour and forty-two minutes. They produced each, on an average, 21·69 centil., or 13·23 cubic inches of carbonic acid, and absorbed 5·44 centil., or 3·32 cubic inches of oxygen. The change of species occasioned a striking change in the proportion of the oxygen lost to the carbonic acid produced. In the case of the cabias it is as one to four, in the puppies of the second series a little less than one to two. Besides the difference depending on their species, the one being carnivorous and the other herbivorous, there is another very remarkable, one to which we have frequently alluded, depending on their development. The new-born cabias come into the world in a more advanced state, which gives them the power of producing more heat.

Hitherto we have seen that the proportion of gas absorbed to the carbonic acid produced, varies principally according to the species and the age; for in casting a glance at the tables, it is evident that the mean quantities differ but little from the particular results. But we shall now observe the results of experiments upon other species, in which the individuals differed much in this respect. These examples are taken from birds, both in laborious inspiration, or in that which may be regarded as nearly free and natural. The conditions of the experiment may be so modified as to approach indefinitely to natural respiration, by increasing the quality of air in proportion to the bulk of the animal, and by shortening the period of confinement.

I chose ten adult yellow-hammers, whose bulk was equal to a little more than 3 centilitres, or 1·8 cubic inches. Each of these were placed in a

vessel of the kind already mentioned, containing 155 centil. or 94·5 cubic inches of air. They remained there only fifteen minutes. They produced on an average 5 98 centil. or 3·65 cubic inches of carbonic acid, and absorbed 1 29 centil. or 7·87 cubic inches of oxygen. Here the small size of the animals, the large proportion of air, the short duration of the experiment, the quantity of carbonic acid, scarcely any at first, and in small proportions at last, allow no room to doubt that the absorption was entirely at the expense of the oxygen, and that the same would be the case in the open air.

In comparing the results of individual experiments of this kind, considerable difference was observable in the proportion of the oxygen absorbed to the carbonic acid produced, ranging between rather less than half and one sixth The quantity of carbonic acid produced was very uniform when the circumstances were similar. This result of my experiments upon respiration, in regard to the great extent of variation in the proportions of oxygen which disappears, and of carbonic acid produced, has appeared to be important, not because it reconciles the results of previous labour (though even that is not uninteresting), but because it establishes a fundamental fact of importance to the theory of that function.

Dr. Edwards is not singular in his opinions as to the absorption of azote, but is supported by Spallanzani, Humboldt, Pfaff, Henderson, Dulong, and last, though not least, Sir Humphry Davy. "This chemist observed it," says Dr. Edwards, "in his own person in so many instances, as to leave no doubt of the fact."

Few persons have contributed more to the interests of science than this celebrated chemist. His name marks an epoch in the history of chemistry and experimental philosophy; and however exalted be the genius of some of his contemporaries, and numerous their discoveries, yet Sir H. Davy must be allowed to be the Newton of chemistry, and to have sustained the scientific glory of England during his short but illustrious career.

His opinions on respiration coincide in great measure with those of Dr. Edwards. "Respiration," he says, "is no more a chemical process than the absorption of chyle; and the changes that take place in the lungs, though they appear so simple, may be very complicated: it is as little philosophical to consider them as a mere combustion of carbon, as to consider the formation of muscle, from the arterial blood, as crystallization." Sir Humphry appears to consider the changes produced by respiration upon the blood to be of a more important kind than is generally considered. Alluding to the popular theory, he says, "I will not allow any facts or laws from the action of dead matter to apply to living

structures: *the blood is a living fluid*; and of this we are sure, that it does not burn in respiration." His idea is, that oxygen, besides its ponderable elements, contains some very subtle matter, which is capable of assuming the form of heat and light. And that, in the course of the circulation, the ethereal part produces animal heat, and other effects; and the ponderable part contributes to form carbonic acid, and other products.

The reader will perceive, from the opinions of Dr. Edwards, Davy, and others, that the formation of carbonic acid gas does not take place wholly in the lung, but by the immediate union of the oxygen of the atmosphere with the carbon contained in the venous blood all over the body. K.

Veterinary Jurisprudence.

The Horseman's Manual: being a Treatise on Soundness, the Law of Warranty, and generally on the Laws relating to Horses. By R. S. Surtees, *Gent.*—Butterworth, London, 1831.

No part of a veterinary surgeon's duty costs him more pains and anxiety, and yet, after all, is apt to turn out less satisfactory to him, than that of *giving his professional opinion in regard to soundness and unsoundness;* and so far, in many cases, counselling or abetting his employer to enter a court of judicature, and encounter the "glorious uncertainty of the law;" in this case rendered yet more gloriously uncertain by at least two, if not three, causes peculiar to and inseparable from the nature of such cases. The first difficulty with which we have to contend is interwoven with the intricate and indeterminable nature of the subject of soundness itself; the second has, in a measure, sprung from the first, and will be found in the mazes and quibbles with which the subject is, in a legal point of view, surrounded: a third species of embarrassment presents itself in the contradictory and unprincipled evidence so often arrayed one against the other on the trial. Taplin, Lawrence, Percivall, and the lamented Castley, have all written on soundness, and have, respectively, divested the subject of some of its obscurity. Percivall's paper underwent a very ample and highly interesting discussion at the time it was read before the Veterinary Society; on which occasion Messrs. Field, Goodwin, Henderson, Langworthy, Law-

rence, Lythe, Turner, and Youatt, entered their opinions on the Society's records: the whole forming such a mass of valuable observation and comment as has never before been laid before the public*. In addition to this, we have given extensive professional circulation to the *laws** on warranty, as well in France as in England; after which we had, in our own minds, concluded the subject to be set at rest for, at least, some time to come.

The object of the present little "Treatise" (which, by some inadvertence, has until now escaped our notice) is purely *practical*—laying down the law as it stands, and shewing in what manner it has been applied in particular cases of warranty and soundness;—in the words of its author, "to collect, in a small compass and practical form, the various decisions on this subject (the law of warranty) which lie scattered through the whole body of reports." In one word, a sort of *digest* of the law of warranty.

For all practical purposes, an amalgamation of law and physic, according to the views taken of them in combination by the courts of judicature, must turn out highly valuable: portraits such as these shew a man at once what he has to trust to, and present to him the probable chances there are both for and against him. In speculating on the events of horse causes, we in vain deliberate on the *medical* nature of the case, and apply that in our own mind to what is or ought to be the law in such matter: we do nothing unless we ascertain the *practice* or *usage* of the courts in like cases, searching for those as nearly similar as possible to our own (for it is hardly possible to find two in every circumstance alike), and thence framing our speculations. To a veterinarian, this, I suspect, might turn out rather an unenviable task—to seek out a parallel to his own case among the numbers "scattered through the whole body of law reports;" even to a lawyer it might prove a tedious, if not a fruitless inquiry. Mr. Surtees has so far rendered both professions a service, that he has saved them this labour, in presenting them with a *coup d'œil* of the "Reports" sought after; and thus enabled them to collate cases, and compare them with their own in as many minutes, as it might, without his "Manual," have taken them hours to accomplish.

In a veterinary or medical point of view, the "Manual" is wanting of that *substance* which the author might, by a little further inquiry and research, have obtained for it; indeed, it does not appear to us that he has been over-fortunate in the selection of his *cases*: we find, however, among them some interesting enough; from which we shall give such extracts as

* Published in vol. ii, iii, of THE VETERINARIAN.

seem to embody the sentiments of our legal big-wigs on a subject whereon they, in many instances, have settled points for us, which we had been totally unable to settle for ourselves.

Cough.—Lord Ellenborough says, "While a horse has a cough, I say he is unsound, although that may either be temporary or prove mortal."

Crib-biting, Mr. Justice Burroughs said, was "A curable vice in its first stage—a mere accident arising from bad management in the training of the horse, and no more connected with unsoundness than starting or shying."

What a pity it is, and how great a loss to us, that his Lordship did not make known his method of cure for this "curable vice;" as well as his means of prevention!

Nerving.—Chief Justice Best (now Lord Wynford) told the jury, "that it was difficult to say that a horse in which there was an *organic defect* could be considered sound; that sound meant perfect; and a horse deprived of a useful nerve was imperfect, and had not that capacity of service which is stipulated for in a warranty."

We quite agree with his Lordship's conclusion.

Roaring is a point on which *one* Judge has delivered *two* opinions; the latter upsetting the former, and establishing it to constitute unsoundness: the first opinion was given in 1810.

Lord Ellenborough then said, "It has been held by very high authority, that roaring is not necessarily unsoundness; and I entirely concur in that opinion."

In 1817 his same Lordship said, "If a horse be affected by any malady which renders him less serviceable for a permanency, I have no doubt that it is unsoundness: I do not go by the noise, but by the disorder." And from that time down to the present day, roaring has been admitted to be a species of unsoundness.

Temporary Lameness.—Sir James Eyre, in 1798, then Chief Justice of Common Pleas, said that "A horse labouring under a temporary injury or hurt, which is capable of being speedily cured or removed, is not for that an unsound horse; and when a warranty is made that such a horse is sound, it is made without any view to that injury; nor is a horse so circumstanced an unsound horse within the meaning of the warranty."

This may or might be *law;* but it is shocking *physic.*

Lord Ellenborough said, "I have always held, and now hold, that a warranty of soundness is broken, if the animal at the time of sale had any infirmity upon him which rendered him less fit for present service. It is not necessary that the disorder should be permanent or incurable."

This is mending the breach made by Chief Justice Eyre.

Fraud.

"In order to set aside a bargain for horses (or indeed any thing else), any fraud or deception practised at the time of sale will avoid the contract; and it is not absolutely necessary that the horse should be unsound, so as to constitute a breach of the warranty, in order to annul a bargain where fraud has been practised."

"But if a man will not use his endeavours to protect his own interest, the law will not take cognizance of the impositions which may be practised upon him owing to his negligence."

Vigilantibus non dormientibus jura subserviunt.

"I remember a case of deception, which I think was brought before one of the police offices: I merely mention it to shew the impositions some people attempt to practise in the sale of horses.

"It appeared that a quaker had a horse for sale, which, like many others, was 'the best in England;' and meeting with a customer who wanted a gig horse, he of course recommended his own.

"The purchaser inquired if he was quiet in harness; to which the quaker replied—'Friend, it would delight thine eyes to see him draw:' whereupon he purchased him, and immediately put him into a gig, which he broke all to pieces.

"The purchaser remonstrated with the quaker, and told him that he had warranted the horse to go 'quiet in harness;' upon which the quaker replied, 'No, friend, I did not: I merely said that it would delight thine eyes to see him draw; and faith so it would mine too, for he never would bear a pair of shafts in his life.'"

Trial.

"Trial," says the law book, "means a *reasonable* trial."

"Judge Blackstone says that, 'a warranty can only reach to things in being at the time of the warranty being made, and not to things *in futuro*—as, that a horse is sound at the buying of him, and not that he will be sound two years hence.'

"This doctrine has been doubted; and Lord Mansfield declared, in a case where the above opinion was quoted, 'that there is no doubt but you may warrant a future event.'"

We need not pursue our extracts further: they suffice to shew the nature and drift of the work before us, as well as to evince how little our learned legal heads yet know about horse concerns. P.

We have received the following case from a correspondent, who solicits our opinion with regard to it. We have been fortunate enough to obtain the sentiments of two veterinary practitioners of deserved eminence. The name of one of them we reluctantly withhold. There is considerable difficulty in the case, and particularly as to the degree of catarrh, the peculiar symptoms which might have attended it, the extent to which the bleeding and physickings might have been carried, and the state of the horse during the intervening fortnight. It is a case which no one can answer decisively without actual inspection of the patient; but, on the whole, we confess we strongly incline to the opinion of Mr. Turner.

CASE.

"A cart horse, five years old, is bought of a dealer, warranted sound; he has a slight cold when purchased; he is worked moderately three or four days, when one of the hind legs swells, for which he is bled and has a dose of physic, which, however, does not reduce the enlargement. He is not put to work again, but in about a fortnight from the time of sale a veterinary surgeon is sent for, and finds him affected with decided and virulent farcy. Is not the horse returnable?"

"Had this swelling of the hind leg proceeded merely from common phlegmonous inflammation, occasioned by plethora, or any temporary disturbance of the balance of the circulation, the bloodletting and purging in all probability would have removed it; and even if the treatment had failed, such a casualty ought to have been borne by the buyer; but the result shews that the said swelling, which appeared so early as the fourth day after the sale, was *inflammation of a specific character*, and the first manifestation of an insidious disease, viz. "virulent farcy," which must have been lurking in the system for weeks before the day of sale.

I am, therefore, of opinion, that in point of equity the buyer ought to recover, and that the horse *is returnable;* although I am not unaware of the numerous perplexities and difficulties with which such a case must be beset before it arrives at the crisis when it is handed over to the twelve gentlemen of the jury for decision."

JAMES TURNER.

"A five-year old horse passing from the dealer's hands into a purchaser's, and having a cold at the time, is fed and put to work indiscriminately along with other horses. An inflammatory diathesis, if not already present, speedily manifests itself in his

system in a very common form, viz. swelling of the legs—one, or two, or all. A single bleeding and one dose of physic fails in subduing this; and he is again put to work. Work aggravates the malady, and it turns to farcy. As far as the "cold" is concerned in the question of returnability, the horse having had it on him at the time of purchase, the warranty, I should imagine, was qualified accordingly. The horse, in my opinion, is certainly *not* returnable on account of the swelled leg, because it evidently was nothing more than one of the commonest effects of such a change as this animal, and at such an age, underwent: and as for the farcy, that seems to be ascribable to one of two causes, or possibly to both of them. Either the animal's habit or predisposition was such as tended rather to unhealthy than healthy inflammatory action on the application of the exciting cause; or else the aggravation induced by work, in a limb already or so recently in an inflamed condition, brought on farcy; the same as we often see glanders induced in coach horses, and occasionally in hunters, from over work. In either case the horse, I should say, most decidedly is *not* returnable on the score of the farcy."—A PRACTITIONER.

Extracts.

PNEUMONIA—FRENCH SCHOOL.

[*Extracted from* VATELL'S *Elements of Veterinary Pathology.*]

INFLAMMATION of the pulmonary tissue, that is to say, inflammation comprehending the ultimate ramifications of the bronchial passages, the bloodvessels which spread over them, and mingle with them and the cellular tissue which connect the whole together, almost always commences in the pulmonary mucous membrane, whence it is communicated to the surrounding parts.

The causes of this affection are analogous to those of bronchitis.

It is recognized in the horse by the following symptoms:—At the commencement there are alternations of hot and cold; laborious respiration; the expiration is incomplete, short, and painful; disinclination to move; instinct induces the animal to keep on his legs, in order to avoid the pain which he would feel were he to lie down; the fore legs are wide apart; there is a cough more or less frequent and painful; the expired air is hot; the pulse generally round, full, and frequent, without, however, being hard; but sometimes soft, depressed, and irregular.

The progress of this disorder, when it is intense, is always very rapid, especially when it attacks both lungs at once, and the greater part of both ; it is not so rapid when the inflammation is slighter, and its seat not so extensive.

Pneumonia may terminate in resolution, hepatization (red induration), œdema of the lungs, gangrene, the assuming of a chronic form, and death.

The lesions which are found on post-mortem examination differ according to the progress of the disease when the animal died. —*First stage.* The pulmonary tissue is heavier, denser, but still sufficiently crepitant ; infiltrated with abundant bloody and spumous serosity ; the alveolar texture is yet apparent ; the interior of the lungs is of a red colour, more or less deep.—*Second stage.* No crepitus; the tissue easily lacerated, and having a granulated appearance ; and the density and specific gravity of which have some analogy to that of the liver (hepatization or red induration) ; the interior of the lungs red, with patches of white attached to the vessels and the pulmonary cells ; the bloody serosity less abundant, and not following the knife.—*Third stage.* A more decided granulated aspect of the pulmonary tissue ; a purulent fluid escaping at every incision. In some cases the pus is infiltrated into the substance of the lungs, and accumulates at certain points, and occupies a greater or less space, and to such a degree that perfect abscesses are formed. The parietes of these abscesses are reduced to a state of purulent softness and decay, which diminishes with the distance from the centre, and they present no traces of false membranes.

When the disease terminates in gangrene (gangrenous peripneumony), the pulmonary tissue is shaded with a brown, yellow, green, or black colour. Some soft points fall into a state of putrid deliquescence. A sanious, turbid greyish green fluid, of an insupportable gangrenous odour, flows from the disorganized parts wherever they are cut.

General bleeding is the most powerful remedy to oppose to pneumonia. It ought to be copious, and repeated until the laborious respiration and fulness of the pulse sensibly diminish, and at intervals so little removed as not to give the inflammation time to regain its original intensity. Gummy and mucilaginous drinks, a mild temperature, restricted diet, and perfect repose, ought to be added to the preceding remedies. When the state of irritation has somewhat subsided, the time is arrived to make use of revulsives (setons and stimulating applications on the brisket and sides.)

Pneumonia — St. Pancras School.

[*Extracts, Gleanings, and Reminiscences.*]

About thirty years ago this disease was not understood, although it is one of the most frequent that occurs. Farriers called it the yellows; they scarcely knew what the lungs meant. This disease kills more horses than all the other disorders put together. I hope I have sufficiently informed you of the nature of the lungs. I have told you that they are composed of cells very similar to an honeycomb; have either a direct or indirect communication one with the other, and also with the windpipe by means of the bronchial tubes, and thence to the nose; and that these cells are for the purpose of receiving atmospheric air; and that the blood in passing through the lungs undergoes an important change.

When a horse is attacked with this disease, he is said to have caught a cold. That horses, from being exposed to wet and cold air, may not catch this disease, I am not prepared to say; but if they do, it is a most uncommon case. Sir James McGregor, principal surgeon to the army during the campaign with the Duke of Wellington, says, that all that part of the army who were encamped on the mountains were, to his suprise, in perfect health, for from the severity of the season he expected to have a great many pneumonic patients. But the great majority of those who were comfortably situated, and who had warm beds and good living, were attacked with catarrh and inflamed lungs. In the human subject, exposure to colds and cough tends to produce the disease; but it is not the cause of it. It makes them more susceptible of heat: cold of itself is a strong sedative. If you look around you, you will see many hundreds of persons who are exposed to low temperature, and never become thus diseased. But let them be exposed to hot air, and that has been breathed again and again, and it is this that does the mischief and injures the windpipe and lungs, and will produce inflammation of the lungs.

This, however, is not the only cause: any thing that excites a greater degree of action of the heart and arteries, as violent exertion, will produce this disease. This is by no means a frequent case in man; for in him it is almost always caused by a poisoned atmosphere; but the horse is almost the only animal in whom increased exertion produces it, and for the most obvious of all reasons, because he is the only animal that can be compelled to move when distressed in his breathing. The ox, ass, or even dog is suffered to be at comparative rest; but the poor horse, in his

strenuous efforts to obey the mandates of his cruel task-master, often subjects himself to disease and death.

The horses that perform stage-coach work are very susceptible of this disease. If the coachman stops at an ale-house, he forces the poor horses to make up by their speed the time that he has lost.

This disease is most frequent in summer, which shews that cold is not the prevalent cause of it.

All these facts tend to prove that pneumonia is occasioned by an increased circulation, no matter how produced, whether by violent exertion or animal poison.

Inflammation of the lungs may be said to consist in the pulmonary arteries acting equal to *two*, while the small vessels of the lungs act only equal to *one*, and thus have not sufficient power to contract on their contents; and on account of the powerful pumping of the right ventricle, and the pulmonary artery throwing in a greater quantity than the smaller arteries can carry, fatal congestion must take place.

A very frequent cause is the purchasing a horse of a dealer in a fat condition, and then riding him, although, perhaps, but a few miles, yet until he is thrown into excessive perspiration. The horse being full of spirit, sets off on his journey with very great courage; but he is soon knocked up; he perspires largely, breathes difficultly, his legs become cold, and in four or five days he dies of inflammation of the lungs. On opening him, you will find his lungs containing six or eight pounds of blood more than they ought to do.

In the country it is a very common practice, when a horse is in a violent perspiration, to take him into a pond of water, and to scrub him all over; and this is not so dangerous a practice as some imagine. If, for instance, you take two horses, ride them the same distance, and cause them to perspire a great deal, let one be treated with the water as just mentioned, and he will become immediately cool, for it causes a great deal of evaporation, and evaporation produces cold, and he will return to his food immediately; while the other will long continue to perspire, and will not be fit for any thing for several hours. We find the best treatment of inflammation of the lungs to be, to promote an evaporation, which will cool the animal and relieve the fever.

Symptoms.—The horse is seldom disposed to lie down; there is great difficulty in breathing; the legs and ears are cold; the tongue dry; the pulse quick. When there is difficulty in finding the pulse at the maxillary artery or chest, it is a very bad symptom; the more distinctly you can feel the pulse the better. The reason of the horse not lying down, is on account of his not being

able then to expand the ribs; the serratus major, a very powerful muscle, ceases to act when the horse lies down; but when he is standing, and the scapula becomes a fixed point, this and other muscles assist in expanding the chest. The horse stands without much exertion; thus, some never lie down, but sleep standing; indeed, they frequently die standing.

There is always a difference in the force of the circulation in different parts of the frame in these cases. The blood will be determined towards the right side of the heart, so as to cause a great difficulty in its passage: therefore, there will be weak action in all the branches of the aorta; and the right side not being able to send blood into the left side, you will have diminution of blood below the common standard in the branches of the aorta, while in the pulmonary artery there is so much that the vessel cannot act.

Thus, we find in this disease, that if we take away five or six quarts of blood, the pulse will increase in frequency and power. This is an almost characteristic symptom of pneumonia. A very frequent symptom is a languid pulse. Nothing is more true, than that the heart and arteries may be in a state of diminished power from being over-distended; and in all inflammations the vessels are more or less in a state of debility.

In the whitlow in the human subject there is frequent throbbing and thumping, and hence it is supposed that there is always an increased action in the inflamed parts; but it is the arteries endeavouring to pump blood into the inflamed part, but which cannot be forced on. The vessels of the part actually inflamed do not pulsate at all.

Treatment.—In the horse, inflammation of the lungs terminates in gangrene much oftener than in the human subject. As, then, the disease is so rapid in the horse, it will require those measures that will have a very speedy effect, and which are bleeding and exposure to cold. You must bleed immediately; and by taking away six or seven quarts of blood you will find the pulse to increase. It is by bleeding and exposure to cold that we cure this disease. In the human subject they have always some guide to go by, viz. bleeding until fainting; but in the horse, if we were to bleed him until he fainted, a hundred to one but he died.

In the human subject we have medicines which will produce such a degree of nausea as to border on syncope, and this prevents the pulmonary artery from pumping its blood into the lungs; but the modus operandi of medicine is quite different in the horse: we endeavour to produce the same effect, but not by the same means. But in all and every case we want to lower the pul-

monary artery. The cure of all inflammation is the same, if suppuration has not taken place, namely, to lower the action of the heart and arteries, and to strengthen the smaller bloodvessels. We have no medicine in use in the horse that will produce perspiration, without increasing the action of the heart, and thereby increasing the disease. Thus blisters are not proper. The case rarely occurs in which blisters can be applied without increasing the pulse. The better practice is, the introduction of setons; rowels which are deeply seated are more contiguous to the diseased parts.

It was formerly the practice to put on a quantity of clothing, in order to produce heat, supposing that this disease originated from cold. This practice is very well in the human subject, for you promote perspiration, and perspiration, by evaporation, generates cold; thus the same effect is produced as by exposure to cold: but as we cannot produce perspiration in the horse without increasing the action of the heart, we employ absolute cold. Where horses have been kept in a hot stable, and clothed warm, we should order them to be turned out into the cold air, and the pulse will be presently lowered.

I have been in the habit of giving small doses of aloes, to excite nausea. I know that nausea is produced, because the horse is off his food, nor will he eat again until the medicine is carried off by purging. By producing nausea, we lower the pulse, and lessen the circulation. We never produce purging if possible.

It is good practice to give small doses of nitre, resin, or turpentine, so as to produce a very gentle diuretic effect: remember it must be *gentle*, or you cause a disease of the kidneys: for the fact is, that in this disease the circulation is so much increased in the system, that there is a kind of inflammation everywhere. And the deeper seated parts, if they are stimulated by medicines, are sure to become inflamed and gangrened.

Thus we give very gentle doses of nitre, or soap, combined with a gentle laxative every other day. I have given foxglove, and hellebore, also aconitum, more than thirty years ago, but never produced any very good effect.

Mr. Percivall speaks very highly of hellebore. I have known it produce salivation, and very much increase the pulse. I do not, however, think it a dangerous medicine, unless given in very large quantities, and I do not recollect a case where the horse died from the effect of it. The dose is ℈i to ʒss, and ℈ij by degrees to ʒi.

A very frequent symptom of this disease is *shivering*, and it has been considered that that is not a proper time to bleed.

Shivering is produced by a determination of blood from the integument to the heart. Why should we promote this determination, or allow the blood to congest there? You should bleed immediately. I would even prefer bleeding during the shivering fit, for during this state you have a greater discharge from the lungs, and by bleeding at this time you lower the circulation on the right side of the heart.

The legs should be frequently rubbed, and kept warm, to determine the blood to the parts, and, by the application of cold externally and generally, you lower the action of the right side of the heart.

Miscellanea.

THE WAR STEED.

I've revell'd away the bloom of life,
  And I've borne the heavier years,
When passionate pride and turbulent strife
  Are the guerdon of hopes and fears:
'Mong women and men, I've found some few
Not false as the rest, but fond and true;
Yet a heart like my own is thine alone
    For dauntless deed
    My gallant, gallant steed.

In the desert we met,—I claim'd no prize,
  But the brave steed lov'd the free;
And a joy outflash'd from his fiery eyes
  At a mortal as wild as he:
And when to the fight together we sped,
On dashing to triumph o'er dying and dead,
As forward all prest, thy conquering crest
    Their course decreed
    My gallant, gallant steed.

Oh, Allah! 'tis gladness to hear thy neigh,
  And gaze on thy lightning glance,
When, pawing and snorting to join the fray,
  Thou seest the proud foe advance,
Till the trumpets resound, and I give thee the rein,
While the loud wind is seizing thy fetterless mane,
As onward we go, till the dust-biting foe
    Their death drops bleed
    My gallant, gallant steed.

And oft, in the calm of the noiseless night,
  I lie by thy panting side;
And the fitful rest as the furious fight
  With my dauntless steed divide;
And thine be the pulse, my charger proud,
I may feel when I fall by the death-shaft bow'd;
And, oh! by one blow may we both be laid low,
    From life's chains freed,
    My gallant, gallant steed.

The Musical Bijou, 1833.

Humane and worthy Distribution of Civic Honours.

An application was made to the Court, on the part of the opposing creditors, to remove an insolvent, who had lately practised as a horse-dealer at Canterbury, to Maidstone gaol, to be heard on circuit, in the neighbourhood of which place all his creditors reside. His debts amounted to £2000; for nearly £900 of which a lady, named King, became answerable, and subsequently married him, on which occasion a settlement of considerable property was made for her benefit.

Mr. Hutchinson stated his readiness to remove the insolvent to Maidstone at his own expense; and he considered it necessary for the elucidation of his affairs.

Mr. Cooke objected to the removal, and said the distance was nothing; for he could prove, by Mr. Hutchinson, that he could do the distance from Canterbury to London (a distance of fifty-six miles) in the short space of two hours and twenty-five minutes.

The Chief Commissioner.—What, Mr. Cooke, in two hours and twenty-five minutes!

Mr. Cooke.—Yes, Sir; I'll prove it by the witness himself.

Mr. Cooke (to witness).—Did you ever ride your own horse for a wager from Canterbury to London in that time?

Witness.—I did.

Mr. Cooke.—And the Corporation of Canterbury, for the extraordinary exploit, rewarded you with the freedom of the city?

Witness.—Yes.

Morning Herald.

Sagacity of a Pony.

On Saturday se'nnight, Mr. Jonathan Gain, of Lump's Farm, in this Island, sold a pony of the Shetland breed, which he had had in his possession about seven years, to Mr. Wm. Padwick, of Hayling Island, who immediately took him home. On Mr. Gain going out of his house on Wednesday morning, he found the pony at his gate; having made his escape from his new master, and swum across Hayling harbour, and returned without leave or license to his old quarters. The animal, whilst crossing the harbour, was seen by the preventive men, who, mistaking his cranium for a cask of spirits, immediately made after him, when, to their astonishment, the supposed cask on a sudden landed on the opposite shore, and galloped off without further molestation. —*Portsmouth paper.*

Hospital for Animals, at Broach, near Surat.

On the following day, our friend, the Sannyassee, undertaking to be our guide, we paid a visit to the Pingiadole, or Banyan hospital for animals. It was commodious and spacious, closed with gates, and exactly resembled a large straw-yard in England: round it were stalls for the invalid inhabitants. Numbers of lean and old cattle, which reminded us of Pharaoh's ill-favoured kine, seemed spending their last days in comfort and luxury, and some were actually breathing their last. Besides these, and some milch cows, there were some old horses; an antelope, with its young one, which seemed as if it had broken its leg, and a peacock; but we saw no appearance of the fleas and other insects which are said to be supported here. The whole looked so comfortable, that we could have spent the day quite as agreeably there, as in some of the sarais, caravanseras, and dunumsallahs, which it has been our fate to visit.—*Elwood's Travels through India.*

New Use of Asses.

The murrain was a very common and fatal disorder some years since. Like the rot in sheep, it exercised the ingenuity of conjecture and quackery. It was by some imputed to a worm with a very large head, and of very vivid colours, which, it was said, poisoned the water that the cattle drunk. By others it was conjectured that some poisonous plant, the seed of which I supposed dropped from the clouds at that particular period, and which most fortunately asses were fond of. On account of this happy propensity they were purchased by many sagacious graziers, and, the murrain ceasing about this period, the asses had all the honour: and it is still usual to keep two or three of these animals on a farm. The number of cattle killed by this dreadful disease was immense—many persons lost almost the entire of their stock, and were completely beggared. However the cure of it may have been effected, it has not been known for several years.—*Dutton's Survey of the County of Clare,* p. 79.

New-year's Day.

In Strathdown, on new-year's day fires of juniper are kindled in every apartment of the house, to the pungent smoke of which every member of the family is exposed until he coughs and sneezes sufficiently, or, in fact, is half suffocated. All the horses and cattle then pass through the same fumigation, which not only removes every disease that may affect the frame at the time, but fortifies the constitution against every future attack.

Monthly Report of Diseases,

From February the 21st to April the 20th, inclusive.

HORSES.—Remaining under treatment 14
Anasarca 1, apoplexy 2, bruised sole (serious) 2, casualties (serious) 2, catarrh 4, colic spasmodic 3, condition, extreme want of 1, contusion with sloughing 2, corns suppurating 1, cutaneous eruption 1, dysuria 1, exostosis of lower jaw 2, fever 1, glanders 3, glossanthrax 1, grease 3, influenza 8, laminæ inflamed 1, mange 2, nephritis 1, ophthalmia 2, obscure lameness 1, ringbone 1, sprain 2, superpurgation 1, thrush with canker 2, teeth, diseases of 1, wounds in feet (serious) 2, wound with sloughing 1 55

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DOGS.—Remaining under treatment 16
Apoplexy 1, ascites 2, asthma 11, bitten by rabid dog 1, cancer 2, canker in the ear 15, canker on the flap of the ear 1, cataract 1, catarrh 4, claws, diseases of the 3, compression on brain 2, constipation 7, contusion 1, cough chronic 1, cynanche tonsillaris 1, diarrhœa 7, distemper 16, enteritis 5, epilepsy 5, fever 3, fistula lachrymalis 1, fracture 4, fungous growths 2, glossanthrax 1, hepatitis 3, hip-joint lameness 1, hydrothorax 1, hysteria 1, inversion of uterus 1, mange 17, ditto acute 1, mechanical obstruction of intestines 1, nervous irritability 1, ophthalmia 6, paralysis 3, parturition 4, pericarditis 1, poison 1, polypus 1, ptyalism 2, rabies 7, rheumatism 8, ringworm 1, scirrhous tumour 4, spasmodic colic 2, spinal injury 1, splenitis 1, sprain 1, stifle lameness 3, superpurgation 1, surfeit 1, teeth, diseases of 4, tenesmus 4, tetanus 1, thyroid glands enlarged 2, vomition 1, worms 7, wounds (serious) 1 -- 192

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COWS.—Garget 1, glossanthrax 1, hepiterrhœa 1 3
SHEEP.—Coryza. A flock of 150 said to be affected, reckon -- 10
CATS.—Diarrhœa 4, distemper 7, fever 1, mange 2, parturition 1 -- 15
RABBITS.—Phthisis (sniffles) 6
HUMAN BEINGS.—Bitten by rabid dogs, and operated on 2

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To various correspondents who inquire respecting the supposed existence of an Epidemic among horses in the metropolis, we can only say that, although we have heard about it, we have seen nothing of the kind. There has been the usual, or scarcely the usual, number of catarrhal affections, some of them severe; but there has been no peculiarity in the symptoms, and nothing to warrant the application of the term epidemic.

The cases of canker in the ear afford an illustration of atmospheric agency. All but one occurred within a fortnight—they were unusually virulent, and they bade defiance to medical treatment; and then, all at once, they disappeared with scarcely any treatment at all.

The cases of Phthisis go on favourably. The former condition and perfect health are not restored, but not a single rabbit has died since the administration of the medicine, although *several died daily* before that. Y.

THE

VETERINARIAN.

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XXIX.

Pleurisy in the Horse, Cattle, and Dogs.

I MUST request your attention this evening to another of the diseases of the chest, scarcely yet recognized in our miserable nosology,—Pleurisy, or inflammation of the investing membrane of the lungs, or the lining one of the thoracic cavity. That inflammation of the substance of the lungs is often propagated to the investing membrane, and that both are, at length, equally involved, is not disputed. The frequent occurrence of effusion in the chest is an unanswerable proof of inflammation of the serous membrane which it contains; but the confinement of the inflammatory action strictly to the pleura used to be denied in our principal school; and although the possibility of it and its supposed rare occurrence is at length admitted, our best writers scarcely enter into the distinct consideration of it. Mr. Blaine, it is true, gives a brief outline of its characteristic symptoms; Mr. Percivall relates some interesting cases of it in "The Veterinarian"; but we are principally indebted to Mr. John Field for establishing the fact of the frequency of the malady, and for enabling us to distinguish between it and pneumonia, as readily and as surely as we do between pneumonia and bronchitis and epidemic catarrh.

Causes.—The prevailing causes of pleurisy are the same as those which produce pneumonia—exposure to wet and cold—sudden alternations of temperature—partial exposure to cold—riding against a keen wind—immersion as high as the chest in cold water—drinking cold water, and extra work of the respiratory machine. To these may be added, wounds penetrating into the thorax and lacerating the pleura, fracture of the ribs, or violent contusions on the side, the inflammation produced by which is propagated through the parietes of the chest.

Extent.—It is sometimes confined to one side, or to one of the

pleuræ on either side, or even to patches on that pleura, whether pulmonary or costal. The inflammation of the lungs which occasionally accompanies rabies is characterized by a singular patchy appearance. That produced on the costal pleura, arising from violence or other causes, rarely reaches the pulmonary covering; and that which is communicated to the tunic of the lungs, by means of the intensity of the action within, does not often involve the costal pleura. In some cases, however, it affects both pleuræ and both sides, and spreads rapidly from one to the other.

Symptoms.—The principal knowledge of these, beside what I have derived from personal observation, I owe to Mr. Field. The profession generally is much indebted to that excellent practitioner. Our continental neighbours appear, however, to be well acquainted with this disease, and Hurtrel d'Arboval gives a fair account of it, whose work, generally, will amply repay your perusal of it. The first symptom is rigor, followed by increased heat and partial sweats; to these succeed loss of appetite and of spirits, and a low and painful cough; the inspiration is a short, sudden effort, and broken off before it is fully accomplished, indicating the pain felt from the distention of the irritable, because inflamed, membrane. This symptom is exceedingly characteristic. In the human being it is well expressed by the term *stitch*, and an exceedingly painful feeling it is. The expiration is retarded, as much as possible, by the use of all the auxiliary muscles which the animal can press into the service; and yet it also is at length cut short—it finishes abruptly in a kind of spasm. This peculiarity of breathing, once carefully observed, cannot be forgotten. The next character is found in the tenderness of the sides when the costal pleura is affected. This tenderness often exists to a degree scarcely credible. If you press upon the side, the horse will recede with a low painful grunt; he will tremble, and try to get out of the way before the hand touches him. Then comes another indication, both of pain and the region of that pain;—the intercostal muscles, affected by the contiguous pleura, and in their turn affecting the panniculus carnosus without, there are twitchings of the skin on the side—corrugations—waves creeping over the integument. This is never seen in pneumonia. There is, however, as we may expect, the same disinclination to move, for every motion must give intense pain.

Difference between the Symptoms of Pleurisy and Pneumonia.—Pulse. The pulse should be anxiously studied. It presents a difference of character sufficiently satisfactory. It is increased in rapidity, and instead of being oppressed, and some-

times almost unappreciable, it is round, full, and strong. Even at the last, when the strength of the constitution begins to yield, the pulse is wiry, although small.

Temperature.—The extremities are never deathy cold; they may be cool, they are oftener variable, and they sometimes present increased heat. The body is far more liable to variations of temperature; and the cold and the hot fit more frequently succeed each other. The mouth is not so hot as in pneumonia, and the breath is rarely above its usual temperature.

The Membrane of the Nose.—A difference of character in the two diseases is here particularly evident. Neither the crimson nor the purple injection of pneumonia is seen; but a somewhat darker dingier hue, yet not to any great degree, is exhibited on the membrane of the pleuritic horse.

General Appearance and Action.—Both the pneumonic and pleuritic horse will look at his flanks, pointing out the seat of disease and pain; but the horse with pneumonia will turn himself more slowly round, and long and steadfastly gaze at his side; the action of the horse with pleurisy is more sudden, agitated, spasmodic. The countenance of the one is that of settled distress, that of the other brightens up occasionally; the pang is severe, but it is transient—there are intervals of relief. While neither will lie down or willingly move, and the pneumonic horse stands fixed as a statue, the pleuritic one shrinks and crouches,—crouches almost to falling. If he lies down, it is on the affected side, when the disease is confined to one side only. The head of the horse with inflammation of the substance of the lungs hangs heavily, that of the other is protruded*.

Auscultation.—From this we derive most important assistance. In a case of pleurisy we have no crepitating crackling sound,

* Gibson, the very best of our old writers on farriery, thus describes, although somewhat incorrectly, the symptoms of pleurisy. I give it, for it is almost the only account of pleurisy I can find among our authors. "A pleurisy, which is an inflammation of the pleura, and a peripneumony, which is an inflammation of the lungs, have symptoms very much alike, with this difference only, that in a pleurisy the horse shews great uneasiness, and shifts about from place to place. The fever, which at first is moderate, rises suddenly very high; in the beginning he often strives to lie down, but starts up again immediately, and frequently turns his head towards the affected side, which has caused many to mistake a pleuritic disorder for the gripes. The horse's ears and feet are always burning hot, his mouth parched and dry, his pulse hard and quick; even sometimes, when he is nigh dying, his fever is continued and increasing; and though in the beginning he makes many motions to lie down, yet afterwards he runs back as far as his collar will permit, and makes not the least offer to change his posture, but stands panting with short stops, and a disposition to cough till he has relief, or drops down."

referrible to the infiltration of the blood through the gossamer membrane of the air-cells; we have not even a louder and distincter murmur: perhaps there is no variation from the sound of health, or if there is any difference, the murmur is fainter;—the pleural membrane is thickened, and its elasticity is impaired, and the sound is not so readily transmitted. There is sometimes a slight rubbing sound, and especially towards the superior region of the chest, as if there was friction between the thickened and indurated membranes.

Cough.—To this may be added, the different character of the cough, sore and painful enough in both, but in pneumonia generally hard and full and frequent. In pleurisy it is not so frequent, faint, suppressed, cut short, and rarely attended by discharge from the nose.

These are sufficient guides in the early stage of the disease, and when it is most of all of importance to distinguish the one from the other.

Progress.—If, after a few days, the breathing becomes a little more natural, the inspiration is lengthened and regular, and the expiration, although still prolonged, is suffered to be completed—if the twitchings are less evident and less frequent—if the cough can be fully expressed—if the pulse softens, although it may not diminish in frequency, and if the animal begins to lie down, or walks about of his own accord, there is hope of recovery. But if the pulse quickens, and although it is smaller, yet possesses the wiry character of inflammation—if the gaze at the flanks, previously by starts, becomes fixed as well as anxious—and the difficulty of breathing continues (the difficulty of *accomplishing* it, although the efforts are oftener repeated)—if patches of sweat break out, and the animal gets restless, paws, shifts his posture every instant, is unable longer to stand, yet hesitates whether he shall lie down, determines on it again and again, but fears, and at length falls rather than lies down, a fatal termination is at hand. For some time before his death, the effusion and its extent are evident enough: he not only walks unwillingly, but on the slightest exercise his pulse is strangely accelerated; the feeling of suffocation comes over him, and he stops all of a sudden, and looks wild and trembles; he immediately recovers himself, and proceeds. There is, also, when the effusion is confirmed, œdema of some external part, and that occasionally to a very great extent. This is oftenest observed in the abdomen, the chest, and the point of the breast.

Effusion.—The cause of death is that which is the result of inflammation of a serous membrane, effusion. The cavity of the chest is occupied by the exhaled fluid, compressing the lungs

on every side, rendering expiration difficult, and at length impossible, and destroying the animal by suffocation. The very commencement of effusion may be detected by the adept at auscultation, by the cessation of the respiratory murmur at the sternum, and the increased grating;—not the natural murmur, but a distinct grating or rubbing. Impress carefully on your memory the importance of observing the difference here—not the crepitating crackling noise as when congestion is going on—not the feebler murmur as congestion advances, and the absence of the murmur when it is completed (and that either over the whole lung or in patches), and the murmur louder than natural where the lung is yet sound, and that sound part has double duty to perform—but the absence of the murmur, beginning from the bottom of the chest, which is the part that will be first occupied by the fluid; or sometimes a wheezing, gurgling, noise there when gas is extricated, during the effusion of the water; the murmur being evidently increased above, where the lungs are not compressed, and where they must work.

It is painfully interesting to watch the progress of the effusion —how the stilliness creeps up, and the murmur gets louder above, and the grating sound louder too, until at length there is no longer room for the lungs to play, and suffocation ensues.

When the effusion commences, the pain of the animal seems to be materially relieved; but the beating of the flanks is increased, and the nostrils become dilated, and then the dread of suffocation immediately follows.

Post-mortem Appearances.—These are various, and depend upon the disease having been pure or combined. If it originated in pneumonia, or became combined with it, both the lungs and the pleuræ will exhibit marks of inflammation, but it will often be curious to trace the ravages of disease when the membrane only is affected:—the highest degree of vascularity—patches of coagulated lymph, the action being so intense that the fluid coagulates as soon as poured out—filaments, bands running across from the costal to the pleura. There is rarely in the horse much adhesion; this fortunately does not often take place in an animal valuable for his speed; for even in case of recovery these adhesions would incapacitate him for that extra exertion which we often require of him, and on his capability of which his value much depends. The fluid varies in quantity as well as appearance and consistence. I have known sixteen gallons contained in both sacs, pale, or yellow, or bloody, or often differing in the two sides of the thorax; occasionally, a thick adventitious coat covering the costal or the pulmonary pleura—rarely, I have said, much adhesion, but the lungs purple-coloured,

flaccid, compressed, not one-fourth of their usual size, immersed in the fluid, and rendered incapable of expanding by its pressure.

Treatment.—Here, as in pneumonia, you should bléed promptly and copiously. Next, and of great importance, aperient medicine should be administered—that, the effect of which is so desirable, but which you do not dare to give when the mucous membrane of the respiratory passages is the seat of disease. Here you have to do with a serous membrane, and there is less sympathy with the mucous membranes of either cavity. Two drachms of aloes may be given in the usual fever medicine, and repeated morning and night until the dung becomes pultaceous, when it will always be prudent to stop. The sedative medicine would be that which has been recommended in pneumonia, and in the same doses. Next should follow a blister on the chest and sides—advisable, we maintained, in pneumonia; *there* far preferable to setons; and *here* more particularly so; for we can bring it almost into contact with the inflamed surface, and extend it over the whole of that surface. An airy, but a comfortable box, is likewise even more necessary than in pneumonia, and the practice of exposure uncovered to the cold, even more absurd and destructive. The blood, repelled from the skin by the contractile, depressing, influence of the cold, would rush with fatal impetus to the neighbouring membrane, to which it was before dangerously determined. Warm and comfortable clothing cannot be dispensed with in pleurisy.

Treatment during Convalescence.—I was loath to allow you even the slightest tonic in the state of convalescence after pneumonia. I urged you to consider the matter well before you ran the risk of kindling the fire afresh. The after treatment of pleurisy, however, is a somewhat different thing. You have in most acute cases that which is usually a remedial effort of nature, effusion—an unloading of the congested vessels; but the fluid is here poured into a cavity in which it must not remain—in which a small quantity of it will produce embarrassment of breathing, and disorganization of the membrane on which it rests, and lay the foundation for injurious deposit and adhesion. You have not only to restore the general health of the animal, which you might be content to take some time in doing, because you would thus be doing it more safely in pneumonia; but you have to rouse the absorbents to immediate action, and to get rid of this extraneous fluid as soon as you can, and therefore I would allow you, or I would urge you, to leave off your sedative medicines sooner, and to substitute for them diuretics. The common turpentine is as good as any, made into a ball with linseed meal,

and given in doses of two or three drachms twice in the day. It is a principle as true in horse practice as in that of the human surgeon, that, if you can increase the discharge of the watery part of the blood, you indirectly promote absorption. It may happen, however, that the system generally may be considerably debilitated by the violence or continuance of the disease, and the absorbent vessels, among other parts, may share in the debility. Well then, you may begin cautiously to give tonics here, and begin as soon as the violence of the disease has abated. The spirit of nitrous ether is a mild stimulant and a diuretic. Small quantities of ginger and gentian may be added to it, while the turpentine should not be omitted.

Paracentesis.—By auscultation and other modes of examination, we have ascertained the existence of effusion in the chest, and that in spite of all our means it is increasing. Is there any mechanical way of getting rid of it? Yes; there is one to which I would advise you to have recourse as soon as you are assured that there is considerable fluid in the chest, and that it is not diminishing. The operation of paracentesis or tapping may be performed. It is one of the simplest in the world. You will pass the side line over the horse, or simply use the twitch, and having one of his legs held up, and, counting back from the sternum to between the seventh and eighth ribs, you will pass a moderate-sized trochar into the chest immediately above the cartilages. You will not have selected the most dependent situation, but as dependent a one as you could with safety select; for you will perceive by this thorax, that there was not room between the cartilages to have punctured lower: you must have injured them in forcing your instrument through, and, what is worse, you would have run great hazard of wounding the pericardium, for the apex of the heart rests on the sternum. Through this aperture, close to the cartilages, you will evacuate the far greater part of the fluid. You will withdraw the stilette, and let the fluid run through the canula. You will not trouble yourself afterwards about the wound; it will heal readily enough; perhaps too much so, for, could it be kept open a few days, it might act as a very useful drain. *It should be attempted early.* I have said that you should have recourse to the operation as soon as you are assured that there is considerable fluid in the chest, for you will at least relieve the animal for a while; you will have given some time for repose to the overlaboured lungs, and for the system, generally, to be recruited. You will evacuate the fluid before the habit of morbid exhalation is established—before the lungs are too much debilitated by laborious action against the pressure of the water, and before their substance is condensed,

and a state of collapse brought on, from which they will be incapable of recovering. Those only of you who have seen the collapsed and condensed state of the lung that had been long compressed by the fluid, can conceive of the extent to which this is carried. I will add a fact, important and alarming, that the records of veterinary surgery do not contain a half-dozen cases of the successful performance of the operation. This should not discourage us from attempting it, but should induce us to consider whether we may not perform it under happier auspices, and before the lungs and the serous membrane which lines the cavity have been so disorganized, and the constitution itself so sadly debilitated. I cannot see any harm that could be produced by an early resort to paracentesis. He must be a bungler indeed who wounded any important part. It really is worth our consideration, whether many a horse has not been lost by delay. You will ascertain by auscultation whether there is fluid in both cavities. If there should be, and in considerable quantity, it will not be prudent to operate on both sides at once. If much fluid is discharged, there will be acceleration and difficulty of respiration to a very great degree. You will not be alarmed at this; it will pass over, and on the next day you may attack the other side; or open both at once, if there is but little fluid in either.

Having resorted to this operation, you will especially be eager, as soon as you dare, to commence your course of diuretics with tonics. You must rouse the absorbents to action before the cavity fills again.

Tendency to relapse.—I think I have observed, that there is in pleurisy not only a far greater tendency to relapse, but to a return of the disease at some indefinite time, than in pneumonia. The lungs do not perfectly recover from their state of collapse, nor the serous membrane from its long maceration in the effused fluid: œdema, cough, disinclination to work, incapability of rapid progression, colicky pains, as the unobservant practitioner would call them, but, in truth, pleuritic stitches; these are the frequent sequelæ of pleurisy. This will afford another reason why we should not defer too long the important operation of paracentesis.

Metastasis.—So far as my experience has gone, there is much greater disposition to metastasis than in pneumonia: indeed, it is easy to imagine that the inflammation of a mere membrane may more readily and oftener shift, than that of the substance of so large a viscus as the lungs. The inflammation shifting its first ground, attacks almost every part indiscriminately, and appears under a strangely puzzling variety of forms. Ascites is the most frequent change. Dropsy of the abdomen is substituted

for that of the chest; or, rathert, the exhalent or absorbent vessels of the abdomen, or both of them, soon share in the debility of those of the thorax.

Curious case of Pleurisy.—Mr. Percivall relates an interesting case illustrative of this. A mare, in the beginning of January, had an attack of pleurisy, for which she was treated in the usual way, and which, although acute at the beginning, in the course of a few days merged into the chronic form of a more than usual obstinacy. A prodigious œdematous tumefaction, extending from the mammæ to the front of the breast, now appeared, which yielded to aperient and diuretic medicines. On the seventeenth day from the first attack, her respiration and pulse became suddenly hurried, with cold and profuse perspiration, and she began to stagger before she had lost a quart of blood. She recovered from this, and continued apparently well for a fortnight, when there appeared a swelling on the back of the right fore-leg, which seemed like a sprain, and which yielded to cold lotion and bandaging. Nine days after that there was a puffiness under the jaw; on the next day but one the swelling returned under the abdomen, and she would frequently lie stretched out at full length, groaning as if gnawed by some inward pain. A week afterwards she was rapidly losing flesh and strength, and was again seized with acute pneumonia. Her pulse 100, and her flanks heaving; she was bled. In the afternoon she seemed to be relieved, but she obstinately stood up, pawing occasionally, and died in the following night.

Every part of the pulmonary, pericardic, and costal pleura was thickened and indurated, and completely clothed with adhesions of effused coagula, while about a gallon of cream-coloured fluid was found within the right side of the chest. The lungs were perfectly sound, the abdomen was distended with a serous fluid almost as limpid and colourless as water, and the mesentery and mesocolon were loaded with interstitial effusions of the same nature. It seemed to be *a disease of the serous membranes*, and points out the connexion of pleurisy with other serous affections.

Pleurisy in Cattle.

On this, although it is the peculiar form under which affections of the chest appear in cattle, I shall not detain you; for the causes of the disease, allowing for the different habits of oxen and horses, are similar, and the symptoms are analogous. It is preceded by rigor, and *by a peculiar trembling of the shoulders.* This is the most characteristic and the most fearful symptom of the whole. The inspirations are short, and yet consist of two distinct efforts; the expirations are long, but also interrupted.

There are also cold sweats, and staring of the coat. The mode of treatment must be, generally speaking, the same as in the horse.

Pleurisy in Dogs.

Cases of genuine pleurisy in these animals are not unfrequent; and I scarcely recollect a case of inflammation of the lungs, which did not ultimately become connected with, or terminate in, pleurisy. The tenderness of the sides, the twitchings, the absence of the obstinate sitting up, and the presence of a short, suppressed, painful cough, which the dog bears with strange impatience, are the symptoms that chiefly distinguish it from pneumonia.

I stated in my last lecture, that the exploration of the chest by auscultation was most satisfactory in pneumonia. It is so likewise in pleurisy; and by placing the dog alternately on his chest, his back, or his side, we can ascertain to a certainty the extent to which effusion exists in the thoracic cavity. Here too, I am sorry to say, that paracentesis has rarely succeeded, and probably, in some measure, from the late period at which it was attempted. The mode of treatment differs little from that of pneumonia. In several cases, when I have been assured of incipent hydrothorax, balls composed of digitalis, tartrate of iron, and a small portion of calomel, have caused the speedy absorption of the fluid.

ON PUERPERAL FEVER IN COWS—RED WATER—GANGRENOUS INFLAMMATION—AND THE STATE OF THE VETERINARY PROFESSION AS IT REGARDS CATTLE MEDICINE.

By Mr. Friend, *V.S. Walsall.*

The favourable notice taken of my first paper in The Veterinarian induces me again to address you. I have chosen the diseases of cattle, simply because few seem disposed to tender you their services in that much neglected department*; and still hoping that it may, at least, serve to draw forth some remarks from others of the profession, and that, in the collison of opinions, truth may be elicited.

As one disease, frequently fatal in its consequences, and common alike to all counties, I shall begin with puerperal fever in cows, the most frequent symptoms of which were detailed in my last communication: but as these vary in different cases, I shall first notice that state of the disease which seems to indicate that

* I am very happy to acknowledge this does not apply to the May number.

the digestive organs are most affected. I need not repeat the symptoms here; but to the observant veterinary surgeon they will be as distinct and intelligible as the finger pointing to the dial-plate. The pulse, of course, must be first attended to, and venesection resorted to, and to such an extent as the exigency of the case seems to require. We must next consider that we have a very complicated apparatus to act upon; that one of the most important functions in the economy of the animal in question (rumination) is totally suspended; that we have, by the power of medicine, to force the contents of the first and second stomachs by a passage which, speaking relatively to a great portion of them, Nature never intended them to travel; that, so far from expecting assistance from the native energy of these organs in enforcing this extraordinary route of the food, we must recollect that they are so enervated as not to be able to perform even their most common duties; and, in addition to this, we must consider that we have a mass greater in quantity than usual, not one-half masticated, and altogether in an unnatural state to pass into the other stomachs and intestines; and it will strike us at once, that the most prompt and active measures can alone ensure our success; and it is absolutely necessary to bear all this in mind in proposing the curative treatment of the animal.

As purgatives, then, which are first indicated, Epsom salts in large quantities, croton seed, and sulphur, are most to be depended upon. The salts act immediately upon the abomasum and intestines, and are excellent pioneers for the croton, whose action is more upon the other stomachs, and consequently very valuable. I dare not depend alone upon either: on the salts, because they are too apt to pass the first three stomachs too quickly; or on the croton, because it is much slower in it operation, and cannot be so immediately extended in its effects. In conjunction they will perform wonders. Here I would just remark, that it is indispensably necessary to give cattle medicines (particularly for purgative purposes) in large quantities of liquid, they having, under all circumstances, to come in contact with a considerable mass of food; and also, that the more the medicine is diffused, the greater surface is, at one and the same time, acted upon, and the more stimulus given to the parts to propel forward their contents; and further, that the manyplus can hardly be affected by any medicine not extensively diffused. As auxiliaries in this class, I would just mention treacle, cream of tartar, and muriate of soda; the last is an excellent medicine, but rather objectionable where milk is an object, it having a tendency to diminish the secretion of that fluid.

It is next to be borne in mind, that there is an unnatural state

of torpor, and want of tone in the organs to be acted upon. To meet this exigency, it becomes necessary to add some strong stimulants and tonics. For this purpose, flour of mustard, spirits sal. ammon. from half oz. to one oz., bark, gentian, ginger, caraways, carbonate of soda, and carbonate of ammonia, are all excellent. Then, for the purpose of acting upon the kidneys, and cleansing and reducing the inflammation of the uterus, sp. æther nit., ol. tereb., sol. chlor. calcis, pulv. nitri (the sulphur acts upon both intestines and kidneys): thus you have the three classes of medicines necessary for your purpose in this state of the disease.

The intelligent veterinary surgeon will not fail to perceive the necessity of strict attention to the comfort of the animal, of placing the litter in a manner to render her recumbent posture as easy as possible till able to rise, often turning her over, &c.; of inducing warmth to the skin and extremities; of raking and clystering when necessary; of administering sufficient quantities of gruel, &c.; of frequently drawing the teats to ease the udder, encourage the flow of milk, and prevent disease of that viscus; and also of externally stimulating the abdomen, in cases of great emergency, with a strong embrocation.

In this communication I purposely avoid naming the exact quantities of the different medicines, as I write only for the information of veterinary surgeons, who are qualified by education to apportion the different drugs to the several exigencies of the case; indeed, I am convinced it is impossible to do so with any degree of precision, my own experience proving, that almost every fresh case requires the exhibition of different quantities of the several classes of medicines before named.

Before quitting this part of my subject, I would again urge (as I did in my last) the necessity of the practitioner pushing his purgative treatment to an extent equal to evacuating the whole of the stomachs, and intestines also: without a thorough conviction that this had been accomplished, I would not desist; for be it remembered, that superpurgation is not to be dreaded in the cow as in the horse, the facility with which we can administer medicines of any quality, and in any quantity, to cattle, renders it not difficult to stop any purgation produced by our own treatment.

I have had one very alarming case of puerperal fever since I wrote last. The poor man to whom the cow belonged told me, in a tone of the deepest distress, that he had lost one last year with the same disease; and that if this one died also, it would completely ruin him. The cow had been ill twenty-four hours when I was called in. I immediately adopted the course I have recommended above: slight purgation took place in about ten

hours: it took two days to clear the stomach and intestines sufficiently, and then the cow got up herself, and began to eat a little. I allowed her to continue purging twenty-four hours longer, and then administered creta prep. and cordial and tonic medicines; I ordered gruel made of fine wheat flour mixed with ale, and she rapidly recovered her health and strength, and came to her proper secretion of milk.

I had another case on the 1st May. I was fortunate enough on this occasion to see the cow within six hours of her falling. I treated her as before: the body was opened in twenty-four hours, and the cow got up. I gave her another drench, to complete the work of evacuation, and she did not require any further medical treatment.

But there is another state of this disease, differing from the foregoing, inasmuch as the metastasis of inflammation in this case seems partly to overlook the digestive viscera, and to fasten upon the spine for an abode; nay, sometimes being eccentric enough to seize upon the joints and extremities for a place of habitation. When this happens, though the danger to life is not so great or immediate, yet it is often troublesome enough to the practitioner. The curative treatment in this case will be, bleeding to an extent indicated by the pulse and the febrile symptoms apparent, sufficiently evacuating the stomachs and intestines, a strong stimulant application frequently extending the whole length of the spine, a fresh sheepskin for the same purpose, and treating any joint or muscle that may appear to be affected with an unsparing stimulant application also. It will not be very difficult to distinguish between paralysis of the extremities occasioned by the affection of the spine and local affection of the joints, &c.; and our treatment must vary accordingly. Sometimes in these cases (in spite of the best medical aid) the animal will lie a considerable time, though even eating and drinking pretty heartily; and it is well to warn our employers of the chance of this. When this does occur, after having used sufficient purgative medicines, and the excretions can be kept regular by soft and cooling diet, tonics and stimulants become the most proper medicines to be given.

Having said all that strikes me as directly necessary on this disease, I proceed to another, very proper to be noticed at this time of the year, known indifferently as red water, black water, or staling blood. This disease appears to be one brought on also generally by indigestion: there are certain pastures which seem peculiarly to produce it, and certain seasons which seem equally to predispose towards it. It appears to me to be one principally affecting the intestines and kidneys. Where so

much of the facts of the case can be got at, it is generally found that the mucous membrane of the intestines is first affected, producing diarrhœa, though this always extends, as the disease proceeds, to the peritoneal coat, and probably to the whole substance of the intestines, and the most obstinate costiveness is the result. Here, having to deal with viscera more immediately under our controul, we can calculate with greater certainty as to the result, though it is equally necessary to act with the same promptitude and energy. I have known bleeding recommended in this disease, though I confess I never saw but one case that appeared to me to indicate it; and because I consider it a peculiar one, as regards the effects of venesection in this disease, I will relate it. I was sent for some years since to a cow belonging to a baronet in Lincolnshire, whose stock and horses I at that time attended. Besides the red water, there was a disease of the heart, the pulsations of which were most unnatural and distinctly audible at a considerable distance from the cow-house. Perhaps without sufficient consideration of the case, I at once decided that it was necessary to bleed: I did so, and to me the result was most alarming and unexpected: almost as soon as blood began to flow, the animal fell; the most complete prostration of strength ensued, the breathing was most distressing and laborious, and I quite expected that death would have speedily ended the affair. But, happily for my professional reputation, the cow, after requiring the greatest possible care and attention, ultimately recovered. The cowman very good naturedly informed the worthy baronet of my mode of treatment, and minutely detailed to him the alarming consequences of it; but I had an opportunity of explaining to him my reasons for departing, in this instance, from my usual practice, and he was quite satisfied, though it might be hard to say if such would have been exactly the case if the cow had died. I have since been inclined to believe that, in this instance, the positive loss of blood by the ureters had actually been so great as sensibly to diminish the volume of that fluid necessary for the healthy and regular action of the heart, and that the audible and unnatural pulsation I have endeavoured to describe was the consequence of this.

I have before said that the intestines and kidneys are the parts principally affected in this disease. A number of medicines that act upon each will at once present themselves to the mind of the veterinary surgeon; but because having (particularly during five years of my professional career) had a rather extensive practice amongst cattle, and in all that time (when a great number of cases of this kind came before me) had the

singular good fortune *never to have lost one* with this disease, I can with the greatest confidence recommend the particular medicines that I employ. They are Epsom salts and sulphur. Sulphur in this case I consider as decidedly a specific remedy. I have cured several cases with other diuretic drugs, combined with strong cathartics, but have found them in some instances fail altogether. I once tried to do without sulphur in one particular case, and proceeded with the experiment to the very threshold of death; and then succeeded in reclaiming the animal, when the bony hand of the grim tyrant appeared stretched forth to seize him. *I have never seen sulphur fail.*

This is a case where the judgment of the practitioner in apportioning the quantity of the medicines necessary, must stand him in the stead of any definite measure thereof. The age and strength of the animal, the nature of the food previously eaten, the degree of peritoneal inflammation already existing, are all circumstances to be taken into consideration before fixing upon the precise quantity requisite. I have found it necessary to give from half a pound to upwards of a pound of sulphur, and from one pound to two pounds of salts at one time. Never under do it: your only chance of success, in some cases, is your first dose. It is frequently the case that the veterinary surgeon is not called in here until disease has made sad inroads in the animal's constitution: recollect, the longer the animal has suffered, the more need for stronger purgative remedies. You will, perhaps, be told by the attendant, that the animal is loose enough in the body. Heed him not; nay, if you even see the beast void a small quantity of nearly liquid fæces, distrust the evidence of your own eyesight; use feeling, and you will find fæces hard enough coming forward; and even if this is not convincing (as it possibly might not be in a very recent case), rest assured it will come, and prepare to remedy it. They never die of this complaint without peritoneal inflammation having proceeded to a very great extent. "Sir," said a farmer once to me (alluding to his having lost one with this disease), "the farrier cured the beast of his staling blood well enough, but somehow his drinks dried his body up, and killed him." I need only hint at linseed gruel as a vehicle for your remedies in this case particularly, to ensure its adoption; and every one will at once see the necessity of warmth to the region of the kidneys, of raking, clystering, &c., with soft and cooling, and in most instances of a total change, of diet.

In the attempt successfully to combat with the diseases of cattle, much more is necessary than the bare knowledge of what particular medicines are suitable to particular cases. The pre-

disposing causes of the existing complaint must be minutely searched into, and whether found in the nature and quality of the food, the manner of feeding, the want of attention to the comfort and cleanliness of the animal, the impurity or the injudicious use of the water given to them, or from what cause soever it may arise, the remedy must be applied to this also.

It frequently happens that the proprietors of our various patients are not sufficiently well informed to understand the "why and the wherefore" of the mode of treatment we propose to adopt, and are so anxious that the animal should eat something, that they will give them any thing for this purpose, however detrimental to them, or opposed to the action of our remedies, unless guarded by the most precise and preremptory directions on this head. A due attention must, therefore, be had to supplying the animal with sufficient gruels, &c., or whatsover in the shape of food we decide upon as most proper for the case, never leaving this matter, which is of great importance, uncertainly or undecidedly expressed. On the subject of diet, will you admit of the following digression :—I remember being once called upon to attend a flock of sheep, belonging to a farmer, who had spared no expense or trouble to bring them to the highest state of perfection. I was shocked, on arriving at his farm, to find eight of his best and finest ewes lying in the folding yard ; they were, in fact, all that had lambed, and all had died, and the farmer himself was in a state bordering on distraction. In this case, disease appeared to have despised and overleaped the ordinary course of inflammatory action, and gangrene appeared in every instance nearly coeval with the first symptoms of suffering. I immediately inquired particularly into the nature and mode of their feeding up to that period of time, and at once directed their removal to such a pasture on the farm as would produce the greatest possible change in their diet. This was done at once ; the ewes were lambing fast, and, after obliging the shepherd to cleanse his hands thoroughly, I staid with him a great part of the day to assist him, and to every ewe that lambed we immediately administered bark, laudanum, and spt. æther nit. in gruel; and dressed the vagina with a mixture of sp. tereb., sp. vini recti., ol. lini, and ol. exeter. ; and the pleasing result was, that after my arrival not a single ewe was lost. The farmer had been giving them an unlimited quantity of turnips on his best grass land, and the consequence was that predisposition to gangrenous inflammation that I have noticed.

It is now some years since ; but the remembrance of the grateful feelings exhibited by that man often recurs to my memory, amid the petty vexations incidental to our profession, with an

influence as cheering as a green spot in the desert to the parched and weary traveller.

To the senior members of the profession these digressive remarks will, of course, appear useless and uninteresting; but I must beg them to excuse them; while I will give the junior branches the credit of being anxious to snatch a wrinkle from any source, however humble; a wrinkle which, while it supposes the experience and respectability of age, intimates nothing of its imbecility or deformity. At this time of the year the practitioner is often called upon to dry a cow of her milk for the purpose of feeding. After a free bleeding, the best medicine I ever found for this purpose is the muriate of soda in large doses (say 1lb.), combined with a little astringent medicine. The decided advantage which I consider the muriate of soda possesses over other medicines for this purpose is, that the condition of the animal is actually better by the use of it, when repetition of it becomes necessary. I felt exceedingly pleased with the excellent letter from Mr. W. Clarke in the April number; it shews that some individuals, at least, amongst farmers regard our exertions with complacence, and would be glad to see us assert the supremacy in that department of veterinary science which relates to cattle also; though as a body it must be confessed they have neglected us. They have, in their Agricultural Societies, &c. premiums for the best animals, of different descriptions; they are shewn, and the prizes awarded; but the best interests of the breeder and the farmer are not thereby proportionably forwarded, because the chain of events which led to success, is not an unbroken one: others cannot, with any degree of certainty, follow them in their devious route; nor can the successful competitors themselves always be sure of being again able to trace the sinuosities and windings by which they arrived at the hill-top. They have forgotten the man who, from the education he has or ought to have received—who, from his minute acquaintance with the structure and œconomy of the animal—who, from his habits of tracing results and consequences to their first principles—and who, from his daily practice of warring not only with effects, but with causes, is the one calculated to assist them in this dilemma. They have forgotten the man who might stand on the hill-top, and point out to them the road by which they have arrived there in the dusky twilight of uncertainty—who might shew them where they have gone direct, and where they have erred from the way—who might give them instructions so sufficient, that not only they but others might arrive at the same summit, by a route much easier and more direct, and so plain that "he who runs might read." That veterinary science is capable of effecting

all this under better and happier auspices I have no doubt; and I hope the time is not far distant when its professors will meet with that encouragement and consideration which the important and extensive benefit to be derived to the farmer and breeder renders a fair and legitimate claim upon them; and I am equally persuaded that, if the veterinary profession be destined to rise above its present degraded state of acquaintance with the Physiology and Pathology of Cattle, if it be destined to assume that importance in the opinions and societies of agriculturalists which it ought to sustain, it must be by your exertions and through your publication; and, if the request of a humble individual might aught avail with you, I would say, persevere, though even there may be nothing to incite you but a posthumous fame, no gratitude but that of posterity.

The above was written previously to receiving THE VETERINARIAN for May; and though there is an excellent article in that Number on one of the diseases which I have selected, yet, as it will be seen that Mr. Harrison and myself differ somewhat in our theory of the disease, as also in our mode of treatment, and as such singular good fortune has attended mine, I venture to send it without alteration; begging, as a favour, that Mr. H. will make a trial of my method on the first case that occurs in his practice, and favour us with the result. I am aware that this disease is characterized by different symptoms, even in districts only a few miles apart; yet so sanguine am I as to the effect of the treatment I have recommended, that I venture to predict it will be favourable, even under the circumstances he has named.

If you think the subject of sufficient consequence, I should be glad of a corner in your next, to make a few remarks on Mr. H.'s paper, and also on the two cases by a veterinary practitioner: it appears to me that some important conclusions, connected with the physiology and pathology of the animal, are attached to them. A very slight hint will direct me.

A CASE OF RED-WATER IN A COW.

By Mr. TAIT, *V.S., Portsoy.*

SOME time ago I was requested to see a cow, which I found affected with the red-water, and which had been ill for two days previously. She had been off her feeding from the time she was observed to be affected, and at the time I saw her she was lying, and scarcely able to rise, with extremities cold, and rumination completely suspended. Breathing much hurried, and pulse

very much accelerated, beating 100 per minute: even standing a few yards from her, you could have heard the heart beating as distinctly as if your ears had been laid against her side. She had been bled the day before to the amount of two quarts and a half, and had got some laxative medicine, but without producing any effect. As she had been ill for some time, and was so weak, I did not take more blood from her, but administered 12 oz. sulph. magnes., 12 oz. ol. ricini mixed with gruel, and ordered injections to be given until it should operate, and her water to be kept till my return.

2d day.—Much in the same state as yesterday, eats nothing, pulse still as quick, medicine has not operated. ℞ ol. lini ℥xx. Water voided with difficulty, and very red, rather approaching to black. Ordered injections to be continued, and plenty of gruel to be given.

3d day.—A few hours after leaving her yesterday the medicine operated, and still continues doing so. Looks somewhat livelier, picks up a little hay: water changed. Ordered any thing she will eat, such as malt or bran mashes.

Thinking my assistance no longer necessary, I did not visit her again until the 10th day, when the owner said to me "she is going to lose her feet." On examination I found he was quite right in his conjectures, as she certainly was losing them; for on laying hold of one of her fore ones it came off in my hand, as did the others in the course of a few days. Her tail also fell away with the exception of about four inches. I ordered poultices to be applied to her feet, and to be continued for some days. I saw her about a week after, and found her doing well, and to all appearance free from pain. She eats food with greediness, and is now tied up to be fed. A new secretion of horn is coming down rapidly again.

A CASE OF STRICTURE OF THE OS UTERI.

By the same.

Since writing the above, I was requested to see a cow that was ill in calving. On my arrival, the gudewife said to me "that the cow was surely witched," as she had no passage to calve. On examination, I found the mouth of the uterus so much contracted, that I could only introduce one of my fingers, and the stricture so strong that I could not break it: I therefore introduced a small probe-pointed bistoury, directed by my finger, and divided the stricture, which allowed the calf to be extracted alive. The cow is now doing well.

PNEUMONIA IN CATTLE, SWINE, AND DOGS,

Belonging to Lecture XXVIII in the last Number,

By Mr. YOUATT.

ALTHOUGH bronchitis is the usual chest-disease of cattle, many cases of pure pneumonia will occur. Working cattle are more particularly subject to it, especially those who after a hard day's labour are abandoned to cold and starvation, or who, the moment they are turned loose, are suffered to slake in the cold brook that thirst by which they have been tormented for many an hour. Cows neglected, or too soon exposed to cold and wet after calving, are often attacked by inflammation of the lungs. It frequently becomes epidemic among them. It occurs oftenest in the spring and autumn, and comparatively rarely in the winter. When a warm spring and premature vegetation succeed to a cold and rainy winter, and at the time that they are first sent to pasture, inflammation of the lungs is very rife among cattle, and especially in low and flat and marshy situations, and where the water long lies stagnant over the flooded meadows. The same ground that gives the rot to sheep disposes cattle to pneumonia.

Symptoms.—The symptoms are analogous to those in the horse; the same rigor, depression, heaving, oppressed pulse, coldness of the ears and legs, and *roots of the horns*, and heat of breath. To these are added diminution of milk, swelling of the teats, loss of appetite, cessation of rumination, and some swelling of the abdomen. A slight cutaneous eruption along the back and sides is a frequent accompaniment of pneumonia in cattle, and which we attentively watch. If the eruption is repelled, the inflammation will become more intense, and probably fatal; if the pustules take their regular course, and break, and desquamate, we augur well. There is rarely any acute inflammation in these animals in which the skin or the subcutaneous tissue does not participate, and that peculiar tenderness about the loins accompanies or succeeds the eruption. There is the same protruded head, the same obstinacy of standing, the same disinclination to move, and a manner of standing even more peculiar than in the horse, the fore-legs being placed as far apart as possible from the sides. Sometimes there is little cough, at others it is constant and distressing, and the sudden cessation of it is one of the most fearful symptoms that can occur. Occasionally the tumours about the joints, to which cattle are so subject, suddenly appear, and we are pleased to see them;

they indicate some metastasis, or possible metastasis, of inflammation.

The symptoms of an approaching fatal termination of the disease are a little but not very different from what they are in the horse; the quick, weak, intermittent pulse; stupor; insensibility of the skin; fœtid breath; fœtid discharge from the mouth and nostrils, and more from the mouth than in the horse. The disease is sometimes fatal before the termination of the second day, although occasionally the animal lingers on to the seventh or eighth day.

The appearances after death are thus far different, that pneumonia becomes oftener complicated with pleurisy than in the horse; effusion into the chest is oftener found, and in larger quantity. The liver has often acquired an extraordinary size, but the intestines comparatively seldom exhibit much appearance of inflammation. In some cases the membranes of the intestines are even *less* injected than in their natural state.

After apparent cure, there is often a chronic inflammation of the lungs, or more probably chronic bronchitis, which continues for five or six weeks, and at length destroys the animal, of which I shall say more hereafter.

Auscultation.—The exploration of the chest is not so well understood here, and I believe practised by very few; but the time will come, when here too it will receive the attention which it deserves. The respiratory murmur is not so loud in the ox as in the horse. The walls of the thorax are thicker, the integument is thicker, and there is more interposed adipose membrane; but the sound is sufficiently distinct for our purpose, and the changes which it undergoes will afford us very useful indications. There is one thing, however, against which we must be on our guard. I have observed again and again that the subcutaneous cellular membrane in these animals strangely sympathizes with every acute disease, and that there is often a peculiar crackling noise, rarely observed in the horse, and not only evident when the back or loins are pressed upon, or when the animal moves, but in every act of respiration. Something of the kind is heard while the beast ruminates; it is most distinguishable about the lower part of the chest. It somewhat resembles the gurgling of a bottle. This is referrible to one of the stomachs. We must be careful that we do not confound the crepitating sound of the subcutaneous texture with that of the lungs during pneumonia, nor the gurgling in the rumen or reticulum with that of effusion into the chest, or the existence of abscess in the substance of the lungs.

Treatment.—There must be the same promptitude and decision.

We must bleed even more copiously than in the horse, and until the animal is more evidently affected. The same sedative medicine should be administered, but in smaller doses; but purgatives are here admissible, and highly useful. We have in the Epsom salts one that is sure and not irritating; and probably, on account of the interposition of such a mass of cuticular surface as the three first stomachs contain, there is not the sympathy which we observe and lament in the horse: the liver, being in contact with the diaphragm most, and sometimes alone, participates in the inflammation. Also, as I have observed when speaking of other chest affections in cattle, setons in the dewlap must supersede the blister:—the skin of the ox is too thick and insensible for the blister to produce its proper effect. These setons may be made to produce irritation and engorgement enough, if the root of the black hellebore is used instead of the cord.

Inflammation of the Lungs in Swine.

The rising of the lights, the popular term for inflammation of the lungs in the swine, is one of the pests of the stye. I am not aware that it is contagious, and yet in a distillery it sometimes destroys a fourth of the hogs in the course of a few weeks. Some atmospheric agency produces a tendency to pneumonic complaints; and the forcing system which is adopted in the styes speedily gives, to that which would otherwise scarcely run beyond catarrh, a character of intense and fatal inflammation. The distressing cough, the *heaving* at the flanks, and the refusal of all food, will be chief indications of the disease. Bleeding will be immediately resorted to—purging, but cautiously attempted: the Epsom salts will be the safest aperient; and then the sedative medicine, already recommended, will follow, but with the substitution of the antimonial or James's powder for the emetic tartar. Two grains of digitalis, six of antimonial powder, and half a drachm of nitre, will be a medium dose. The disease will often run its course with an intensity and fatality only equalled by the inflammatory fever of cattle; our measures must therefore here likewise be prompt. The phthisis, or consumption, which is the too frequent termination of the disease, even when the animal weathers the first attack, can be combated only by cleanliness and warmth, and mildly nutritious food.

Inflammation of the Lungs in Dogs.

The complaint, although not frequent, is here singularly marked. The extended head—the protruded tongue—the

anxious blood-shot eye—the painful heaving—the hot breath—the obstinacy with which the animal will *sit* up, hour after hour, until his feet slip from under him, and the eye closes, and the head droops from extreme fatigue, while in a moment he is roused again by the feeling of instant suffocation—these are symptoms that cannot be mistaken. Here, from the comparative thinness of the integument, and the parietes of the chest, we have the progress of the disease brought, as it were, completely under our view. The exploration of the chest of the dog by auscultation is a beautiful and a wonderful thing. As, however, pneumonia in the dog is so generally connected with pleurisy, I shall defer what I have to say respecting it until the next lecture, except remarking, that here too our measures should be prompt, our venesection copious, our purging somewhat cautious, and produced by the Epsom salts, and not by aloes: the sedative medicines, those just recommended for the swine, and the quantity regulated by the size of the animal.

VETERINARY AFFAIRS.

EDINBURGH VETERINARY SCHOOL.

The annual examinations of students in this Institution, established under the patronage of the Highland Society of Scotland, commenced on Thursday last, and were concluded on Friday. Several of the most distinguished medical professors, lecturers, and practitioners of this city conducted the examinations, in presence of a numerous attendance of the directors and members of the Society, and of gentlemen interested in veterinary science and rural affairs. Among those present we noticed Sir John Stuart Forbes, treasurer of the Society; Sir Thomas Dick Lauder; Sir R. Keith Dick; Mr. Fergusson of Woodhill, convener of the Society's committee in charge of the school; Mr. Graham of Redgorton; Mr. Macpherson Grant of Ballindalloch and Invereshie; Mr. Snodgrass Buchanan of Cunninghamhead; Mr. Inglis of Redhall; Mr. R. Johnston; Mr. Sandeman of Springland; Mr. Horne of Langwell; Mr. Lamont of Knockdow; and Mr. Low, professor of agriculture; besides several other members of the Society, and Mr. Macdonald of Staffa, and Mr. Gordon, the secretaries of the Society. Among the medical gentlemen were, Professors Sir George Ballingall, Graham, and Trail; Drs. Macintosh, Knox, T. J. Aitken, Robertson; Mr. Liston, and Mr. Fergusson, lecturers in this city; Dr. White, inspector-general of hospitals; Dr. Davies, domestic surgeon to their Majesties; Mr. Bowen, surgeon, Life Guards;

Mr. W. Wood, Mr. Newbigging, Dr. Gillespie, Dr. Macdonald, and Dr. Mollison, and Messrs. Henderson, Tennent, and Young, veterinary surgeons. The general result of the examinations afforded the highest satisfaction to the intelligent and competent judges; and the following eleven young men were found duly qualified to practise the veterinary art, and will receive certificates accordingly, viz. John Purdie, Wiston, Lanarkshire; William Riddel, Garioch, Aberdeenshire; Adam Pope, Tarves, Aberdeenshire; James Turner, Edinburgh; Patrick Fergusson, Easter Duddingstone; James Drysdale, Weem, Perthshire; John Thomson, Murthy, Perthshire; William Lyon, Forfar; John Liddle, Brockholes, Berwickshire; Adam Ross, Inverness; and Henry Thomson, Rosyth.—Before separating, Mr. Wood, in name of his medical friends and himself, addressed the students, adverting in powerful language to the importance of their duties, and to the obligations which they owed to the unceasing and scientific labours of their instructor, Mr. Dick. Dr. Macintosh also added some valuable advice to them upon maintaining a correct professional character throughout life, concurring heartily in all that had been said upon the merits of the school. The convener of the Society's committee then acknowledged, in grateful terms, the valuable and kind services of the medical examinators, as also the liberality of Doctors Munro, Knox, T. J. Aitken, and Murray, and Messrs. Liston and Fergusson, in affording the students gratuitous attendance on their lectures, without which, Mr. Dick stated, he could not have been able to impart the knowledge which the students had acquired. The convener also adverted to the commodious and elegant hall which had been erected by Mr. Dick, and in which they had now for the first time assembled, as being both useful and ornamental, and reflecting much credit upon the public spirit of Mr. Dick, and upon the judgment and taste of Messrs. Dickson, the architects who designed it.

CONCOURS FOR THE SITUATION OF ASSISTANT-PROFESSOR OF ANATOMY AT THE SCHOOL AT ALFORT.

(Recueil de Médecine Vétérinaire.)

This meeting, the programme of which we have published in one of our preceding Numbers, is terminated; and in saying that it was the most remarkable one that has hitherto taken place, and that it reflected honour on all the candidates who presented themselves, we express the opinions of every one who was present. The Alfort School has reason to be proud, for four of the candidates were its pupils.

Five competitors entered their names; they were all inserted in

the list, and all took their part in the contest until the last moment. These were,

MM. Lecoq, chef de service at the school at Lyons
.... Prince ditto at the school at Toulouse
.... Rigot } ditto at the school at Alfort
.... Delafond }
.... Vogeli, army veterinary surgeon.

The situation for which they were candidates was a division of the professorship of anatomy. M. Rigot, who was here on his own favourite ground, and who knew well how to maintain himself there, nevertheless had formidable antagonists in some of his fellow competitors; but he fully sustained, in the various examinations of the concours, that reputation which he had so justly acquired as a distinguished anatomist, and shewed himself, in every respect, worthy of the palm awarded him by the jury.

MM. Prince and Delafond, of equal merit, and whose numerous scientific works have already ranked them among the first veterinary surgeons, were rivals worthy to enter the lists with M. Rigot, and they acquired fresh laurels.

M. Prince particularly distinguished himself in all the oral examinations, and possesses qualifications which promise to our schools an excellent professor at some future period. To the merit of a clear and methodical exposition of the matters on which he treats, he adds, to a very great degree, that of giving his ideas with a clearness, a precision, and a felicity of expression, which we cannot too highly praise; but the habit which he has, and for which we certainly do not blame him, of considering the subject of which he is speaking in the most comprehensive and general manner possible, makes him sometimes neglect details which are dry, it is true, but which are not destitute of importance.

If M. Prince is listened to with pleasure by all who love to see truly philosophical ideas adopted as the basis, and made the common bond between all the natural sciences, M. Delafond knew how, in a different manner, to attract as deep attention, and to gain the suffrages of his auditors. One object seemed to govern all the oral examinations of this candidate, viz. that of seizing and developing the divers portions of science of which he spoke at their point of contact with veterinary practice; and this he did with a degree of truth and tact which characterized the judicious observer, and at once betrayed the author of some excellent articles on pathology, with which our journal has been during some years enriched. M. Delafond also distinguished

himself at the sittings devoted to the performance of certain surgical operations.

M. Lecoq is, perhaps, the candidate whose knowledge is most extensive, and whose erudition the most varied; he speaks with order, clearness, and precision: but an excessive timidity, by hindering the development of all his powers, and taking from him that self-possession and confidence so necessary in the imposing solemnity of a concours, sometimes prevented his words from reaching the ears of all his auditors. And we, who were enabled to hear him, regretted this for his sake; for that which he did say was well worthy of being listened to, and would have been admired by every one.

M. Lecoq, to whom we are happy to assign a well-deserved portion of our praise, exhibited an example, rare in the present day, of a man of superior talent not possessing sufficient confidence to render him estimated as he deserves.

It was the first time that M. Vogeli appeared in a concours. Although it was only two years since he left the school at Lyons, he ventured to mingle in this scientific contest, and to measure his strength with athletæ, most of whom had been already honourably proved in more than one combat of this nature. Although he evidently and deeply felt the advantages which his adversaries possessed over him, M. Vogeli was not daunted; a vivid imagination,—a cultivated mind,—an easy, original, and frequently happy style of expression,—furnished him with powerful resources against the plainly unequal chance of success by which another man in his situation would have been overwhelmed. Let some few years of experience pass over him, and we venture to promise M. Vogeli certain success, for he possesses every quality requisite for success in a concours.

In fine, after congratulating the school of Alfort on the nomination of M. Rigot to a situation which he is so well calculated to fill, we must notice the generally brilliant manner with which all the candidates fulfilled the divers conditions of the concours; proving the rapidly progressive march of veterinary science, the importance it has assumed, and the excellent direction which it has taken during the last few years. We delight to consider it as a guarantee of the future character of our schools, and a pledge of the success of the science which they profess.

Mr. Gabriel's Lectures.

Last week, according to our announcement, Mr. Gabriel delivered his course of lectures at the Athenæum on the horse. In the first lecture he entered into a critical investigation of the

good and bad points of horses, grounded on anatomical principles; pointing out those most desirable for speed, safety, and draught, and mentioning the various mistakes generally made on the subject. The skeleton of the horse, and a very spirited sketch of the famous Eclipse, afforded ample illustrations of his remarks. The next lecture he devoted to the more prevalent diseases of this useful animal, clearly elucidating the symptoms, and pointing out the more scientific mode of treatment now had recourse to for their alleviation. In the third and fourth he entered into a full and detailed description of the foot, a subject, as he remarked, with which every sportsman was ambitious to be thought acquainted, while, in fact, very few had even the most cursory acquaintance with it. His details on this part, instead of wearying, as the lecturer thought proper to say he feared they would do, appeared to be highly interesting to every one present; and the novel ideas he advanced on its beautiful but complicated structure, and highly important functions, will not soon be forgotten by those sportsmen who have had experience of the truth of the old adage, "no foot, no horse." The course was attended by about fifty of the *élite* of the sporting world, all of whom expressed their gratification.—(*Plymouth and Devonport Journal.*)

THE VETERINARIAN, JUNE 1, 1833.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

THE FRENCH ARMY VETERINARY SURGEONS.

We have been struggling, and to a certain extent successfully, for the improvement of our art at home. Our veterinary brethren in France have lately commenced a similar contest. Although four years of study, and that study including the whole circle of the liberal arts—every thing which could prepare a man to mingle with the best and the most intelligent society of his day were required before the veterinary student could compete for a diploma—and without that diploma he could not enter the cavalry service: although he thus entered the service with the education, and probably with the feelings and manners of a gentleman, he was not recognized as such there. By some strange anomaly in the code of military law, not only was he excluded from the rank

and privileges and society of the officers, but he was placed low on the regimental list; and, after many years of honourable service, was compelled to limit his ambition to the acquirement of the rank of quarter-master.

Worse even than this! degradation of rank was the least insult of which the cavalry surgeon had to complain: it was more than insinuated that he was or might be incompetent to the discharge of his duty, or dishonourably neglectful of it; and he was placed under surveillance, and of whom?—of the riding-master of the regiment, to whom he was to render a daily account of all that he did, and who was to report to the major of the health of the horses, and the *attention* of the veterinary surgeon.

This was an unnatural and a degrading state of things, and galling to the veterinarian were a thousand circumstances connected with it. The general dissatisfaction of this branch of the service had often been strongly expressed, but, so far as we are aware, no attempt had been made to bring the complaints of the veterinary surgeons in a tangible form before the proper quarter. The professors of the different schools, the natural guardians of the interests of their *éléves* and the respectability of the profession, had slumbered at their posts: the cavalry veterinarians had never coalesced as a body, and claimed those rights to which on every principle of reason and justice they were entitled. Under an arbitrary government, and a military law more than usually severe, perhaps this would have been dangerous; and the different governments which had rapidly succeeded to each other had something else to do, beside redressing the grievances of the oppressed and undervalued medical attendant on the horses, the companion of the assistant quartermaster. At length, one of their number, a mere assistant veterinary surgeon *(vétérinaire en deuxième)*, boldly put himself in the breach. This was M. Vogeli, of whom such honourable mention is made in our account of the late concours. He addressed petitions to the minister of war and the chamber of deputies. They were rather lengthy ones: we will somewhat abridge one of them; but M. Vogeli shall in a great measure speak for himself, and our readers will then better understand the situation of the veterinary surgeon in the French cavalry service. M. Vogeli deserves and he will receive the gratitude of his brethren.

We give his petition to the minister of war, which, *mutatis mutandis*, was the same as that to the chambers, except that it was presented after that to the deputies, and contained fuller reference to the ordonnances which relate to veterinary surgeons:—

"Monsieur le Maréchal,

Penetrated by the interest which you have never ceased to evince in all the measures of your administration relative to the proper care and management of horses in France, I venture to hope that you will lend a favourable ear to the petition which I have the honour to address to you, on the organization of the veterinary medical department in cavalry regiments.

Having hitherto been ranked beneath the riding-master, who fills in reality, and in virtue of his duty, the proper situation of the veterinary surgeon, the latter, unnoticed and despised, has numberless obstacles opposed to his advancement. Considered, without regard to his medical knowledge, as occupying an inferior grade in the army, without any particular claim to regard, he always is superintended and often commanded by the riding-master; thus testifying the mistrust which is attached to him, and the injustice and folly of such regulations.

To elucidate this statement, permit me, M. le Ministre, to refer to and comment on some of the regulations which point out the rights and duties of the riding-master and the veterinary surgeon.

The regulations relating to the interior direction and discipline of the cavalry regiment, say, article 77:—

2d.—This officer (the principal riding-master) is charged with the superintendence of the infirmary.

Article 79.—He shall propose to the major, who shall submit to the council of administration, all directions for the treatment of horses either under disease or suffering from accident, and also directions for the shoeing of the troop horses and those of the officers.

He shall at the same time deliver to the major a report, 1st, on the service of the veterinary surgeon and of the infirmary; 2d, on the management of the shoeing and the administration of forage and medicines; 3d, on the general health of the horses, and the changes which have taken place amongst them.

He shall deliver to the major a report of the forage which is given to the horses, and any changes which he may deem necessary.

Article 80.—The riding-master, assisted by the veterinary surgeon, shall inform himself of the proper medicines and regimen which should be prescribed for each horse, so that the horses shall not be classed in stables according to the squadron to which they belong, but according to their strength, their health, and the care which they require.

The paragraphs seven and eight, intitled, the *Superintendence of the Infirmary* and *Farriery*, contain regulations which I must state somewhat at length.

Article 83.—The riding-master is responsible for the management of the infirmary, both as regards the treatment of the horses and the exhibition of medicines, but without intermeddling with the details relative to the veterinary art.

The horses that are admitted into the infirmary shall cease from the day of their entry to be under the superintendence of the commanding officer

of their squadron; but every saddle or draught horse entering the infirmary shall be attended to by the soldier to whom he belongs.

As soon as the veterinary surgeon shall have discovered the nature of the disease with which the horse is affected, and shall have indicated in writing to the riding-master the treatment to which he is to be subjected, the latter (the riding-master) shall see that all the necessary operations shall be performed, and the medicines regularly administered.

The riding-master shall each day give an account to the major, both by writing and in the general report, of the state of health of all the horses in the infirmary, *and the attention which the veterinary surgeon pays to the treatment of them*, and he shall also see that the horses are classed according to the nature of their diseases.

Article 84.—The riding-master shall exercise a constant superintendence of the shoeing, by entering into all the details of the farriery, visiting the operations of the forge, repressing all the abuses which he may discover, such as the shoes being badly made, or made too heavy, the nails being badly driven, or of a wrong sort, &c.; he shall also take an account of the quantity of iron used by the shoeing-smiths; he shall see that they are provided with nails, and shoeing tools, &c., and with those instruments which, not belonging to the forge, are not furnished by government.

The blacksmiths shall be personally examined by the riding-master, but only as to their competence to discharge the duties of their situation; and he shall frequently deliver a report of the observations which he has made on that subject.

Three evident divisions present themselves in these articles. In looking over the first, which comprehends the regulations contained in article 77, 79, and 80, should we not think that we are reading the regulations which indicate to *veterinary surgeons* a fraction of the medical part of *their* duty? I say a fraction; for beside all that is there required as to general medical treatment, a crowd of other objects, such as the influence of exercise, food, water, stabling, &c. on the health of the horses, is omitted in the regulation which announces the duties of this officer.

As to the 83d article, its very wording suffices to demonstrate that the government, penetrated by a feeling of the importance of the cavalry horses, has judged it indispensable to place some one over them, whose rank is high enough to enable them to repose all confidence in him; but they will not allow the veterinary surgeon to be that man, though he alone of all in the regiment has pursued that course of study which will enable him properly to discharge these duties, and conduct this superintendence. On the contrary, the greater part of the duties of a veterinary surgeon are assigned to the riding-master, without requiring from him the same studies; while to the veterinarian is assigned nothing but the surgical exercise of his art, and those duties which properly ought to belong to the farrier-major: and for this little responsibility, they require from him four years of serious study, and which can only procure for him a title in the army almost illusory. The following expression

comprises, in a few words, my ideas :—The riding-master is the veterinary surgeon, and the veterinarian is the surgeon.

As to the 84th article, it proves how indispensable the creation of farrier-majors are to the well-being of the cavalry regiments; and also shews the necessity of a constant surveillance *ad hoc*, by some competent man, on this essential part of the service.

A few brief remarks will prove to M. le Maréchal the truth of these propositions.

The riding-master is charged with the care of the infirmary, says a passage in art. 77. These words lead to the following dilemma: either the veterinary surgeons of the regiment are honourable men, and well versed in the practice of their art, or they are not. In the first case, if the importance of the medical treatment of horses requires from those who exercise it a military rank analogous to that of captain, why is the veterinary surgeon, instead of being invested with that rank, made to submit to the humiliation of a control, which is not even thought requisite in the medical treatment of *men*, who are much more valuable to the country than horses can possibly be? And, in the second place, the army has no business with dishonourable men, or men incapable of their profession.

The riding-master, says this article, is to send to the major a report of the service of the veterinary surgeon, and of the infirmary; and also an account of the state of the horses, the nature of the food which is given them, and the supplies and substitutions which he deems requisite.

Let us examine scrupulously, and without presumption or partiality, what kind of report the riding-master can give as to the service of the veterinary surgeon, and the state of the infirmary. A stranger both to the medicine and surgery of domestic animals, he cannot form an adequate judgment of the competence and conduct of the veterinary surgeon; and whatever be the terms in which his report is couched, it can contain, in substance, but these words :—The veterinary surgeon is or is not attentive; he does or he does not that which he promises to do: for whatever determinations the veterinarian may have taken, though they may have been dictated by a profound knowledge of the disease, or by some egregious error, the riding-master, ignorant of the veterinary art, and being ordered by the terms of the 83d article not to meddle in any thing relative to it, can neither approve of nor condemn it, and must blindly report according to the interested representation of the practitioner. Of what value, then, can be his control?

Besides, however distinguished a soldier he may be, however high his reputation as a riding-master, does he always know

enough of botany and materia medica properly to draw up and class those reports which are required of him in the 80th article? We will grant that he is perfectly acquainted with all that belongs to the breaking and training of young horses, and the instruction of the men in the art of riding; but is he not obliged to resort to the veterinary surgeon to complete these reports, and the most valuable parts of them, and which, being presented in his name, gain him esteem and honour, while the real author is neglected and unknown?

The 80th article, it is true, gives him the veterinary surgeon for an assistant; but it is the veterinarian alone who ought to "class" the young horses, and according to their diseases assign to them their proper diet. The duties of the riding-master are, the training of the riding horse, the ordering of the manœuvres, and the superintendence of the bitting and harnessing.

This, M. le Maréchal, is not a gratuitous supposition: question any of these gentlemen; I call upon them by their loyalty as French officers. Very small is the number of those who have never had recourse to the knowledge of the veterinary surgeon; and still fewer those who will not freely render them justice, in acknowledging that they are not in their proper situation.

The first paragraph of the 83d article contains an absolute contradiction. It says, that the riding-master shall be responsible for the direction of the infirmary, both as regards the treatment of the horses and the employment of the medicines, but *without, in any way, interfering with the details of the veterinary art.*

How can the riding-master direct what medicines are to be used without intermeddling with the details of the art?

The fourth paragraph of the same article is equally as impossible punctually to execute. To no one is given the power of preventing or foreseeing the progress of organic disease, and tracing its march. The veterinary surgeon cannot, therefore, in any case, conscientiously give the riding-master a programme of the treatment, which he may, perhaps, deem it right to change every day or every hour. This truth is so much felt, that I know that the riding-masters scarcely ever require this from the veterinarian. And even if its execution was perfectly easy, of what good is this programme, which the veterinary surgeon sketches as he pleases, and places what he likes in it, and of which the riding-master cannot be a judge? How does this humiliating system of surveillance accord with the declaration of the 83d article, which forbids the power of control over any thing relative to the details of the art?

Could not the account of the progress which the horses make,

either for better or worse, be much more advantageously rendered by the veterinary surgeon himself? Who is more interested than he in the cure of his patients, and in "classing them according to their diseases?"

I trust that I have shewn, by the preceding remarks, that the real cavalry veterinary surgeon is not he who bears that title and its distinctive insignia, but the riding-master.

Thus, then, in France they have deemed it necessary to invest a man elevated in rank with the care of the health of the cavalry horses; but this man is not, as in Germany, England, Russia, Denmark, Sweden, &c., one who has devoted himself to previous medical study, and is furnished with a veterinary diploma: he is here THE RIDING-MASTER.

I request M. le Ministre's permission briefly to compare the education of each of these persons.

The riding-masters, pupils of the royal riding school, have, during two years, gone through a complete course of military riding, cavalry manœuvres, &c. &c.; to which is added (and there is little more than the name of it) some lessons on the exterior of the horse, the nomenclature of his bones and of his viscera, and, perhaps, some general notions of his regimen. This course is acknowledged to be only secondary, and is considered merely as a form.

The veterinary surgeons, on the contrary, apply themselves, during four years, to the study of the most minute anatomical organization of the horse; the history, general and minutely detailed, of every change of which his frame is susceptible, and the relation between organization and function. They have called to their aid (solely for the purpose of better studying his proper regimen and therapeutical treatment), topography, geology, meteorology, rural economy, chemistry, physic, pharmacy, botany, &c. &c.; yet all these studies cannot, it seems, be placed in the balance against the erudition of the school at Saumur, where they do not dissect ten horses in a year.

We know not how certainly to assign the cause of this degradation of the cavalry veterinary surgeon, or the origin of the false position in which he is placed; yet, on close examination, perhaps we may imagine it to be indicated in the fourth section of the decree of January 1813. In fact, we read in paragraph three of this section, under the title of "Regimental Veterinary Surgeons," and at the 40th article, as follows:—

"*There shall be, in each of our regiments of cavalry or train of artillery, a chief veterinary farrier and a second veterinary farrier; those who are at present in the regiments shall class under these denominations:* the oldest shall take the title of first veteri-

nary farrier; if there be three, the third shall be called the supernumerary veterinary farrier."

This article might falsely induce the belief that until then veterinary surgeons were not legally attached to the regiments; that they had no rank, no resemblance of rank; and that they were only called in from imperious necessity, which frequently substituted for them the soldiers or farriers without instruction, and who, in performing their functions, invaded their rights, and were thus tacitly recognized by the promulgation of this decree. This opinion is still more strengthened by reading the third paragraph of the 43d Article, which is as follows:—"*In default of supernumerary veterinary surgeons, the regiments are authorized to choose, in order to supply their place, one or two quarter-masters, brigadiers, soldiers, or farriers: when they are employed as veterinary surgeons, they shall receive pay and rank immediately below the veterinary surgeon.*"

Thus, when the regiment was at a distance, and their urgent need did not allow them time to send to the veterinary schools, these soldiers perform functions which are but indefinitely named, and there might be as many as six of them in some regiments. The decree which confirms them in their employment by these words, "those who are chosen," &c., sufficiently recompenses their merit in placing them upon an equal rank with the assistant quarter-master; but the rank which is accorded to them cannot be the reward of their medical knowledge, or of their military proficiency.

But now, when all the regimental veterinary surgeons come from some veterinary school, where they have pursued an extensive and varied course of study, have they not a right to claim, as the reward of an education which has unfolded to their view all the magnificent scenes of natural history, that recompense which is granted to the pupils of every other establishment who join the army; especially when this reward is demanded in the hope of being useful to their country, and of honouring it still more, by converting the required rank into the means of enlarging the dominion of that science into whose beauties they are initiated?

As to the articles regulating the veterinary service, and which are found from numbers 355 to 360 inclusive, they are indispensable to the sanitary service of the horse, and are placed in the chapter entitled, "The Duties and Attributes of the Riding Master," and they relate only to that part of the service which devolves on him who bears the title of veterinary surgeon to the regiment."

M. Vogeli afterwards goes on to prove that this usurpation of power in the riding-master is of no long date. He traces it to

the decree of Napoleon, when the schools not being able to supply a sufficient number of veterinary surgeons for the service of the cavalry, these incompetent persons were of necessity appointed. They required surveillance, and the riding-master was the most competent person to superintend them. He adds, that it was for want of reference to the actual merits of the case, and from the preparers' of the successive ordonnances careless copying the words of the former ones, that this surveillance, which was intended to be exercised over the unskilful and the untaught, was extended to and perpetuated over those to whom it is an insult.

M. Vogeli states this strongly, yet respectfully, and prays that the minister of war would grant to the veterinary surgeons a proper rank, and restore to them that consideration and responsibility which had been taken from them and bestowed on the riding-masters.

He then sketches a plan (the appointment of a veterinary examining committee) by which, if it were needed, the competence of the veterinary practitioner might be more effectually ensured: and concludes with complimenting the minister of war on his zeal for the service, and the readiness with which he had ever attended to the humblest suggestion which had a tendency to benefit it; and says, that he reposes the utmost confidence in the good sense and justice of the minister, and is assured that he will impartially consider the claims of a class of military men too much neglected; and with these impressions he respectfully awaits the result.

In our estimation the memorial does infinite credit to the intelligence and good feeling of M. Vogeli; and we can hardly conceive how it could fail of making deep impression upon every impartial and well-disposed mind.

It was presented to the Chamber of Deputies, and referred, as all petitions are, to the consideration of a committee charged to inquire into the justice of its prayer, and report thereon to the Chamber.

On the 7th of January, 1832, Mr. Hector Daulnay, the chairman of the committee, made the following report:—

"M. Vogeli of Lyons, assistant veterinary surgeon to the fifth squadron of the train of the park of artillery at Douai, petitions that army verinary surgeons should obtain the rank and title of commissioned officers.

"The petitioner founds these pretensions on the nature of the services which the veterinary surgeon has to perform, on the medical studies which these services require, on the moral responsibility which he incurs in regard to the cure of the sick horses; and preserving the health of those that are well; and, lastly, on

the unjust inequality of the law, which accords to a young soldier having just joined a regiment, without any other instruction than that which he may have gained at the school of his village, the right of becoming sub-lieutenant, lieutenant-captain, or even a superior officer; while the veterinary surgeon, whose acquirements should recommend him to the esteem of every one, vegetates far below the happy conscript who had once been so inferior to him.

"It is the nature of the human heart that every one should exaggerate the importance of his own profession, and form his judgment according to his own prejudices and interests. Self-love is often the instigator of actions useful to society; but when it breaks through those limits which destiny and laws have assigned to it, it is necessary to restrain it, and to prevent those wanderings, which would introduce trouble and difficulty into all social institutions.

"The veterinary art is a profession useful and honourable, freely chosen by those who exercise it, and who know, when they embrace it, what they ought to expect. But, to compare it with the profession of arms: the life of a soldier, whom the law drags from his domestic hearth to undergo a service of fatigue, privation, and every sacrifice; whom it causes to undergo all the chances and all the dangers of war; which requires from him a total abandonment of his will, a temporary dereliction of his liberty; and to claim, as the reward of services rendered to the faithful companion of the soldier's glory, that rank which the soldier obtains only at the price of his courage, his devotedness, and his blood shed on the field of battle; this is to set up a ridiculous pretension, and to exhibit the very extreme of presumption.

"The laws have regulated the duties, the rights, and the rank of regimental veterinary surgeons. On their first entrance they wear the uniform and take rank of assistant quarter-master, and take rank under the quarter-master, with the title of second assistant veterinary surgeon.

"After a stated time of service they assume the insignia of quarter-master, and rank after the adjutant, with the title of first veterinary surgeon. Their pay as second veterinary surgeon is superior to that of the subaltern officer; their pay, as first veterinary surgeon, is equal, with their rations, to that of the sub-lieutenant, and is increased after certain years of service.

"On their retirement their half-pay is regulated by their full pay, and by the length of their service.

"They may, by their good conduct and skill, obtain the title of veterinary inspector, with a salary of 2000 francs (£100),

an allowance of 400 francs (£20) for lodging, and of 300 francs (£15) for extra expenses. This is their station in the cavalry, and the recompense of their merit and services.

"Your commission thinks that the law, in its just solicitude, has provided a sufficient remuneration for the services which the regimental veterinary surgeons render, and propose that you proceed to the order of the day."—"(Adopted.)"

This petition, containing facts that could not be contradicted, and reasoning calmly but irresistibly urged—the prayer of those whom education had made gentlemen, not to be banished from that society which alone could be congenial to them—but to have those rights restored which were never designed to be wrested from them, and the withholding of which argues equal injustice and absurdity,—this is, in the opinion of M. Hector Daulnay, "to set up a ridiculous pretension, and to exhibit the very extreme of presumption!" Indeed!! We comprehend not the delusion under which this gentleman laboured; yet from what we see in our own country, where the claims of the veterinary surgeon are more worthily acknowledged, we can well imagine that there are those so bigotted, or so interested, or so ignorant, as to deem every claim of the poor veterinarian, even to subscribe to the funds of his own school, or to occupy a seat at a board which he alone can competently fill, "ridiculous pretension, and the very extreme of presumption!" We envy not the feelings of such men, wherever they are to be found. But the veterinary surgeons of France, what say they? Why they now, for the first time, combine together, and no fewer than 75 of them are guilty of another act of "ridiculous pretension and extreme presumption," and present a petition to the same purport to the same assembly.

Let us see with what reception it meets. M. de Lariboissiere is reporter here. The sitting was on December 22, 1832.

He thus addresses the chamber:—

"Seventy-five veterinary surgeons, attached to the cavalry, protest against the rank assigned to them in the army. Hitherto associated with the sub (non-commissioned) officers of the regiments, they think that they ought to be classed among the commissioned officers. Their pretensions are founded on the importance of the duties which they discharge, and the previous education which they must receive. They observe that they are still treated like the farrier-majors of the old cavalry corps, although the art which they profess has become a veritable science, following the progress of every other, and multiplying every day its points of contact with them.

"They believe that the services which they have to render to

the corps to which they are attached would be considered of more importance, and, consequently, would be more useful, if they were in a more independent and elevated station; and that every thing which concerns the health and condition of the horses would be benefitted. On this occasion they observe that, so far as the interests of agriculture, and the revenue are concerned, too much attention cannot be given to this division of the military service; and it is consequently both reasonable and useful that those men should be treated with distinction, who devote their attention to the study of the horse, his condition, and his diseases. England, Germany, and Prussia, appreciate the services of their veterinary surgeons, and do not hesitate to bestow on them the rank of commissioned officers. It is only in France, where our profession had its birth, that they are refused that rank which they possess everywhere else. Impressed by these considerations, your petitioners demand:

"First, That the candidates deemed fit for the study of veterinary science, and destined for military service, be, in conformity with the royal ordonnance of the 28th of August, 1832, admitted as supernumerary military pupils during their first two years of study, and that they shall not be titular pupils until they have undergone an examination to prove their capacity.

"Secondly, That the pupils quitting the school, after having obtained a diploma, shall rank in the regiment into which they enter as officers, and enjoy all the prerogatives attached to this rank.

Thirdly, That a committee, composed of veterinary surgeons, shall be formed by the minister of war, and of whom the director-general of the cavalry shall be the president: of which committee there shall be two subdivisions; the first shall examine all those who are connected with the purchase of horses, or the management of the military studs; and the second, those who are connected with the service of the regiments.

"For a considerable time the situation of the veterinary surgeons, attached to our regiments, has attracted the attention of the minister of war, and of all our cavalry officers devoted to the study of their profession. The different ordonnances on the matter, which have followed each other, prove that they appreciate the services which the veterinary surgeons render, and wish to stimulate their zeal by ameliorating their condition. At the very moment that this petition is submitted to you, a copy of it is sent to the central committee of the cavalry for their consideration. Although your commission is convinced that it will be treated with all the attention which it claims, nevertheless, as the petition which has been addressed to us may offer some new discus-

sion, I am charged to propose, that you shall send it to the minister of war."

M. de Ludre.—" I do not mean to oppose the reference of this petition, recommended by the commission. The cavalry veterinary surgeons constitute a valuable portion of our troops; but we cannot invest them with the rank of officers without augmenting their pay; and this is not the time to add fresh expenses to the war department, which has already such large ones to support; expenses which they cannot get rid of even in time of peace, if they wish to preserve an army worthy of France.

" I therefore think that the veterinary surgeons ought not to be commissioned officers; not because they are unworthy of advanced rank; not because we ought not to do all we can for them; and, for instance, we might augment a little the pay of those who have been twenty-five or thirty years in the service; but as to granting them the epaulette, I think we cannot do it. I have made these short observations in order that the reference of the petition may not prejudice the question. I am not opposed to this reference, because the petition appears to me to contain useful views of some objects, with which I know the cavalry committee are at present occupied."

M. le Rapporteur.—" I shall merely remark to the chamber, that the rank of officer having been refused to veterinary surgeons, their pay has at various times been so much augmented, that it is now equal to that of the sub-lieutenants, and even the lieutenants. In the last ordonnance another advantage was also granted them, by diminishing the time necessary in order to claim their highest pay."

The chamber agreed to refer the petition to the minister of war, as was proposed by the commission.

This is something better: an opinion adverse to the petitioners is expressed, but there is no charge of " ridiculous pretension and extremity of presumption;" on the contrary, some justice is done to the character of our profession, and the value of the services which it renders in the cavalry. There is only one expression at which we are at all disposed to be a little angry, and that is, when the reporter, who seems to be a sensible and good-feeling man, forgets himself for a moment, and talks of substituting increase of pay for those honours which, we are quite assured, situations being changed, would, in his mind, be prized above all price.

The zealous and indefatigable Vogeli is again in the field, and in February last he had the " ridiculous pretension, and extremity of presumption," to carry his prayer to the Chamber of Peers, and there plead the cause of his insulted profession.

The *Duke of Praslin* was the reporter. He thus addresses the Chamber of Peers:

"M. Felix Vogeli, of Lyons, assistant veterinary surgeon fifth squadron of artillery, now garrisoned at Douai, shews, that during many years the army veterinary surgeons had been soliciting the intervention of the chambers, to obtain for them a change in their position in the army, which would be more conformable with the interests of the service, and also their assimilation to the rank of a commissioned officer. He added, that they alone in the army are deprived of the advantage of a law, or ordonnance, which would fix their rank in an invariable manner; that every thing concurs to make this class of military men a mixed body, participating both of the civil and military character; that they are sometimes considered as commissioned officers, sometimes as sub (non-commissioned) officers; that they are destitute of hope for the future, and of the proper incitement to emulation, with nothing to encourage them in their humble but useful labours; that such a state of things must materially interfere with the well-being of the service.

"Your committee always acknowledging that it belongs to the government alone to regulate the rank and advancement of the divers classes composing the army; considering that the veterinary surgeons, both of the artillery and the cavalry regiments, may render great services to the state by preserving many valuable horses; that their medical studies, their information, and their indefatigable services, seem to render them worthy of a better fate than to be put on a level with workmen, boot-makers, saddlers, tailors, and others; considering the attention of government should be solicited to determine the situation and rank of these persons in a more proper manner; to put an end to the uncertainty, which must, by discouraging them, prejudice the well-being of the service; considering that a demand similar to this was, in the session of 1831, sent to the minister, your committee, from these motives, have the honour to propose that you shall also refer this petition to him."

M. le Marquis de Laplace.—"I rise to support the proposition of referring this petition to the minister of war, with which the report of your committee concludes. I begin by declaring that I should not do this, if the petition were not drawn up in the manner in which it seems to be in the report now before us. I think, if I heard it aright, that the petitioner does not imperatively demand, in the name of an association of all the cavalry veterinary surgeons, such or such amelioration; but he confines himself to the prayer that the attention of the minister of war may be directed to the situation of the army veterinary surgeons,

in order that he may make those ameliorations which he may deem proper.

"The numberless petitions which are addressed to one or the other of the chambers every season on the state of the veterinary art in France; the objections which have been made to the ordonnances that regulate the profession, are, it appears to me, sufficient indications that they are not yet properly modified, or, at least, that much yet remains to be done. The petition of which we are now speaking relates only to the position of veterinary surgeons in the army; and I am not afraid of being contradicted by any general officer in the cavalry when I say, that it is not what it might be, and what it ought to be: and that, in giving them a more determined situation, we might require from them knowledge even more profound, instruction more complete, and hope for services even more important. This question is also connected with another of very great importance, and which ought, particularly at the present time, to occupy the attention of the minister of war; I mean the examination of the various circumstances which have occasioned the loss of so many horses, and which loss has been felt by most of the cavalry regiments. Proper diet has, we know, the greatest influence on the preservation of the health of horses: it is proper that this should be managed with discernment; that it should be directed and applied by men actually belonging to that duty, and competent to discharge it, and who are attached to their profession, and will fulfil all its duties. It is from this course of thinking, that I am led to believe the proper regulation of the rank of the army veterinary surgeons, and their settled organization, are objects of importance; and without entering into any longer details, which would fatigue the attention of the chamber, I vote that the present petition be sent to the minister of war, as well as all the other documents which may serve to enlighten the administration on this subject.

M. le General Lallemand.—"Gentlemen, in reading the report of the petition which has been presented to you, I remark with pain, at the end of it, a phrase which seems to me very unfounded and ill-applied. The petitioner complains, that the fate of the veterinary surgeons has hitherto depended on the will of the commanding officer of the regiment. This is an attack on the commanding officers which I ought to take up. The veterinary surgeons are always treated with respect. The commanding officers are consulted as to their merits, and the recompense which they ought to obtain from government. The reports of the colonel are given to the inspectors, and it is not until after a most scrupulous examination that they are presented to the

minister of war. In all the cavalry regiments which I have inspected, I have remarked that the veterinary surgeons are invariably treated with distinction; and they obtain that confidence which the importance of their duties merits. I myself have been employed in soliciting from the minister of war the most honourable recompense for a veterinary surgeon, who was equally distinguished for his talent, his diligence, and his gentlemanly manners. I ought to remove the erroneous impression which this article might cause as to the feelings with which the veterinary surgeons are regarded by the commanders of regiments. I shall add to the observations which I have made, that the greatest interest is attached to the condition of the veterinary surgeon by the minister of war, whom I had the honour to see during the last summer at the cavalry office. He had examined all the anonymous petitions relating to the interests of veterinary surgeons. All the petitions addressed to the minister of war, and taken into consideration, have been submitted to the examination of a committee of infantry and cavalry officers, recently organized by the minister of war, and the committee, at the present moment, is diligently employed on this subject. This is the point demanded by the army veterinarians.

"The observations made by the honourable peer who spoke last, relative to the care which ought to be taken of the cavalry horses, are perfectly right. The important character which veterinary surgeons ought to support has also been justly described: but there are other causes for the loss of horses than those mentioned by the honourable gentleman. It is the result of the great quantity of horses which it is necessary to procure in a given time, and that time very short. France cannot furnish them, and they are therefore bought by contract from dealers, who, getting them at the lowest price, furnish us with the very worst kind of horses, the refuse of Germany, and often even those rejected by foreign cavalry regiments. This evil is the offspring of necessity. We have been subjected to the conditions imposed on us by necessity, which, to the present day, weighs upon the army, and from which it is very requisite that the country should be freed.

"These considerations will, doubtless, be the objects of the reports that will be submitted to you, and to which you will give all the attention that they merit, both for the interest of the army, of France, and of agriculture, which would have profited by the millions now unhappily given to strangers. This necessity of buying horses from foreigners, and to which we will no longer submit, is the cause that has most influence on the loss of so many horses.

"There is also another circumstance, about which the minister of war is now actively occupied: this is the bad system of con-

fining horses in close stables, where they have not sufficient air. It is well known that the horse, as well as every other living being, requires a certain volume of air for his existence and preservation.

"I will not now enlarge any more on the circumstances that occasioned the great loss of horses which our army has sustained. I have wished simply to support the observations of the honourable peer who spoke before me. And, returning to the object of the petition, I repeat, that the minister of war has deeply considered the petitions of the veterinary surgeons; they have been submitted to a committee of cavalry and infantry, who are competent to examine them, and the committee ought to have delivered some opinion concerning them."

M. le Comte d'Ambrugeac.—"I think that it is impossible the chamber can receive the petition of which you have heard the report, otherwise than by the order of the day. In fact, gentlemen, what is the subject of it? It requires, that we shall give to a very respectable and very useful class of individuals the rank and station of officers."

M. le Marquis de Laplace.—"It requires some amelioration of their condition."

M. le Comte de Ambrugeac.—"They demand to be classed with the officers; which is to the same purpose, it appears to me, as claiming the station and rank of officers."

"It is one of our constitutional principles, that the King is the supreme head of the army; that to him belongs the organization of the army, that is to say, to give to each his proper rank, and to assign to every rank its proper functions. The law has nothing to do in such a case. What do they require of us? They ask us to interfere in favour of the veterinary surgeons, and obtain for them a superior rank. The chamber is not an office for claimants; it can do nothing in this affair; and I therefore propose the order of the day." (Supported.)

M. le Rapporteur.—"I reply to the honourable peer who last spoke, that the commission does not demand for veterinary surgeons the rank of officers, but only that their situation may be fixed, and not subject to variation. It is wrong to put expressions in the report which are not in the petition. Those expressions which offended M. le General Lallemand would have been erased by the commission if they had been found in the petition. I therefore have the honour to inform the chamber that your committee has recognized the principle, that it belongs only to the administration to determine the respective ranks; but they propose sending the petition to the minister of war, that he may

consider, whether it is not necessary to the interest of the military service to determine the future condition and rank of the veterinary surgeons attached either to the cavalry or artillery.

"Their position incessantly varies. Sometimes they are on a level with the commissioned officers, sometimes with the subordinate (warrant) officers. The petitioners complain of being confounded with the master-saddlers, breeches-makers, and tailors. It is certain that there ought to be a distinction between these two classes of persons; it is also certain, that the preliminary studies which are exacted at the veterinary schools should exempt veterinary surgeons from being confounded with artists, who are quite illiterate, and who often can neither read nor write."

M. le Comte Dejean.—"I beg pardon of M. le Raporteur for differing from him; but I ought to say, that the situation of the army veterinary surgeon is never varied. Thus, as M. le General Lallemand has said, in every regiment of the army they are respected in proportion to their worth. M. le General Lallemand has told you, that he has solicited recompenses for several of them. In conclusion, I think that there is nothing which is required to be done, and consequently it is perfectly useless to send the petition to the minister of war."

(The order of the day was put to the vote, and carried.)

The cause of our continental brethren is evidently progressing; and whether their just claims are immediately yielded, or hope is farther deferred, the recorded sentiments of such men as the Duc de Praslin, the organ of the committee, the Marquis de Laplace, and even General Lallemand himself, will make their proper impression. Our advice would be, agitate, still agitate; again and again urge the "ridiculous pretension," and exhibit "the extreme of presumption." Our hearty good wishes accompany them; and ere long the voice of truth and justice will be heard. Y.

Extracts.

French School.—On Pleurisy.

[*Elemens de Pathologie Veterinaire, par* P. Vatel.]

Inflammation of the pleura is often accompanied by that of the lungs. There are, nevertheless, cases where it exists alone, and without complication.

Acute Pleurisy.—The action of cold air on the skin; the in-

gestion of cold liquids into the stomach when the body is in a state of perspiration; sudden suppression of cutaneous perspiration or an old discharge, the sudden repression of an exanthematous eruption; exterior violence, such as blows, bruises; wounds penetrating the chest, are the most frequent causes. Pleurisy is often consequent on affections of the lungs; it is then exceedingly dangerous.

It is not easy at the commencement of the disease to distinguish inflammation of the pleura from that of the lungs. Shivering, anxiety of countenance, laborious respiration, heat of the expired air, dryness of the mouth and skin, being symptoms common to both pleurisy and pneumonia, are of very little assistance in determining the disease: but when the complaint is of some few days' standing, pleurisy developes itself; a dry cough without expectoration, short and interrupted inspiration, pain when the chest is compressed, hardness, frequency, smallness, or strength of the pulse; these are the symptoms by which it may be recognized.

It is usually about the fifth or sixth day that pleurisy terminates, either in resolution or gangrene. This latter termination is rare. When it passes this period without diminution of the intensity of the symptoms, it is to be feared that it will terminate in hydrothorax. The respiration then becomes more laborious, the heaving of the flanks is increased; the nostrils are dilated; the chest yields a dull sound on percussion. If the ear is applied to the thorax, the noise made by the fluid during the act of breathing may be sometimes heard; the beats of the heart are dull, and occasionally scarcely recognizable by the ear; the animal stretches his fore-legs apart; sometimes the external region becomes œdematous. The symptoms increase in intensity, the respiration is extremely impeded, and the patient dies of suffocation.

The liquid which is effused contains flakes of albumen floating in it. The pleuræ are covered with similar productions, in some cases having already begun to undergo the process of organization; and it is very evident that by means of these pseudo-membranes the pleuræ contract adhesions, and this in consequence of their inflammation. When pleurisy has been very intense, and death has quickly followed, the effused liquid is occasionally not serous, lemon-coloured, and limpid; but of a milky appearance, purulent, and with an insipid and nauseous odour. It also frequently happens, that it is a veritable sanguineous or sero-sanguineous effusion which takes place.

When pleurisy first begins, and we are certain that it is occasioned by the sudden impression of cold air, which checks the cuta-

neous perspiration, it is often of service to rouse the action of the skin, by keeping the patient warm and grooming him well.

Pleurisy is also advantageously opposed by bleeding, both local and general; revulsives under the chest; warm, emollient, gummy, and slightly diaphoretic drinks, strict regimen, &c. The patient should be placed in a mild temperature, and carefully kept from all draughts.

We have succeeded by the use of mustard poultices under the breast of the patient. This revulsive is far preferable to a blister at the commencement of the disease, as its action is much quicker, and we can more easily have recourse to local bleeding afterwards. All temporizing may be fatal to the patient, and therefore we should commence by a general bleeding, if the inflammation is intense. We should apply a strong and hot poultice of mustard powder to the inferior part of the chest, these regions having been previously rubbed with hot vinegar until redness of the skin appears. At the end of two hours, and rarely after that time, we scarify the enlargement which results from this application, and we expose the part to the vapour of boiling water. After having obtained a sufficient quantity of blood, we apply the hot poultice again; and we repeat the local bleedings as often as the state of the patient requires it (as many as four or five times in four-and-twenty hours). We sometimes have again recourse to general bleedings, when the blood does not flow fast enough from the wounds made in the enlargement. When we think we should cease the local bleeding, we cover the part again with a poultice of linseed meal, which is changed as often as the state of the part requires it.

When pleuritis is followed by effusion, it scarcely ever happens that the patient recovers. He may remain a long time in this state, but he usually dies very suddenly. Rarely indeed is the liquid effused absorbed again. In such cases the administration of diuretics and diaphoretics is advisable, such as nitre, resin, digitalis, oxymel of squills, colchicum, &c. Puncture of the chest (paracentesis), to give vent to the liquid accumulated there, is seldom efficacious; and it is only when there no longer remain any signs of inflammatory irritation that it can be attempted.

Chronic Pleurisy.—It usually follows acute pleurisy. It is, in general, produced by the same causes, acting with less intensity. It is very difficult to recognize before effusion of the pleura (hydrothorax) has taken place. Its progress is always slow. If it preserves all the characters of acute pleurisy it requires the same mode of treatment, modified to suit the intensity of the disease (see *acute pleurisy*). If, on the contrary, the pain pourtrayed by the symptoms is not so lively; if the frequency of the

pulse is scarcely marked, it must be treated in the same manner as hydrothorax.

Pleuro-pneumonia.—Inflammation of the lungs is often accompanied, particularly in the horse, with inflammation of the pleuræ. The disease then announces itself by the symptoms common and particular to both maladies. It is in these cases much more serious than when one only of these affections exist. Bleedings ought to be followed up by local ones, and which are particularly successful in the treatment of pleurisy. The other therapeutic treatment remains the same.

The Pernicious Effects of Mercury on Ruminants, and particularly on the Ox.

By M. Barraud, *V.S., Barberieux.*

On the 15th of April, 1814, I was called in to look at an ox, which had on one of its legs a tumour of a scirrhous nature, and so situated as to be easily seen. It had made so much progress in a short time, that the owner began to fear lest the animal would be permanently blemished on that part, and thus lose a great part of its value; he, therefore, much wished me to take some means to disperse the tumour, or, at least, to prevent its further growth.

I advised him to rub the diseased part with the following ointment, which I had often found to succeed in similar cases, in both the horse and the mule:—

℞ Strong mercurial ointment
Ointment of marshmallows
Laurel ointment, of each two ounces, and rub them well together.

I ordered the first rubbing to take place on the same day, and advised that it should be repeated daily for four days; thinking that by that time all the ointment would be used, and the immediate effect which I expected, produced.

On the 19th they informed me that since the preceding evening the animal had refused to eat, and appeared to be very ill. I was not able to see it until the 20th, when I found it in a pitiable state: it was sadly depressed; the horns, the ears, and the whole surface of the body were cold; the muzzle was dry, the eyes weeping, the pulse small, weak, and hurried; there existed a serous diarrhœa; the evacuations, which were very abundant, diffused around a cadaverous and extremely fœtid odour; the animal obstinately refused either to eat or drink, and I regarded it as lost. Nevertheless, I wished to try some means. I administered mucilaginous drinks, rendered anti-putrescent and

sedative by the addition of a slight dose of camphor, suspended by the yolk of an egg. I also bled and gave emollient clysters. Friction with a brush was applied all over the animal; he was then covered up and kept warm. But all my efforts were vain; the animal got worse and worse, and died on the 25th, in a state of complete exhaustion, and with every symptom of intestinal mortification.

The post-mortem examination, which was immediately made, shewed me the following lesions:—

The intestines presented some gangrenous spots; the mesentery was black, and also in a state of gangrene: its glands were infiltrated, and of four times their natural size; the peritoneum was of a red, violet, and blackish hue, and gave way if the finger was lightly pressed on it; the lymphatic glands of the groin were infiltrated, and as much increased in size as those of the mesentery; there was no peculiarity of appearance about the other organs.

The above disorders evidently indicate an acute entero-peritonitis. There is not a shadow of doubt about this; but if I was certain as to the character of the disease, I was far from being so as to the cause. The history of the case, which the owner of the animal gave me, did not in the least assist me as to the etiology of this disease, which came on so suddenly.

Not finding any other probable cause, I thought on the mercurial ointment; but the suspicions which I had were extremely vague. I had many times used it, both on the horse and mule, for similar affections to the one in question. I knew that it was confidently used in human medicine; and I had no reason to suppose that it would be hurtful to the ox. I had never read or heard of the use of it being injurious to animals of this species, and it required a second case to enlighten me on this point; and I soon had fresh proofs of the danger of its use, as will be seen in the following observations.

CASE II.

The 20th of March, 1815, I was sent for to see an ox which had on its cheek a scirrhous tumour of a considerable size. I thought it might be possible to disperse it by friction, with a mixture of mercurial and marshmallows ointments; and accordingly I rubbed some well in before I left the animal, and ordered the herdsmen to do the same on the morrow, which they did.

The 22d day they told me that the ox was very bad.

I did not see it until the 25th; when I found it dull, with the pulse very quick and hard, the respiration hurried, and an obstinate cough: there was an eruption of large buds over the

whole surface of the body, and particularly on the course of the large lymphatic vessels; such as on the flat side of the thigh, the genital parts, and along the raphé, over the whole of the belly. These tumours resembled both in form and size farcy buds. I immediately abstracted a large quantity of blood, and repeated the bleeding two hours afterwards. I administered alternately antiphlogistic and slightly sudorific drinks (of infusion of elder flowers); strong clysters were also thrown up, and white water mixed with nitre was given for drink. I inserted two powerful setons in the chest.

On the 24th, the respiration was rather easier, the pulse not so quick, and the cough had diminished.

On the 25th, the animal was decidedly better; almost all the tumours were in a state of suppuration.

The 26th and 27th, the symptoms were still more ameliorated.

The 28th, the tumours were drying up.

The 30th, they had all disappeared by a species of desquamation. The ox was quite restored to his natural state, except that there was a slight cough, which remained upon him from that that time until he was sold, which was two years after this accident.

As to the tumour on the cheek, from the moment of the eruption of the aforesaid buds, I had applied a thick layer of blister ointment; and it very quickly disappeared, and scarcely left any trace of its existence. I could not find any other cause to which I could attribute this sudden eruption; and I thought I could this time, with more certainty than before, accuse the mercurial ointment.

CASE III.

In 1818, one of my brother practitioners had under his care an ox, which had, on one of its fore extremities, a tumour of a similar nature to that which I have mentioned in my first case. He made use of the same remedies which I had been trying, and with as little success; but he obtained a result similar to that which followed my treatment of the ox in my first case. Uneasy as to the consequences of a treatment which began so inauspiciously, he came to consult me, and described the state of his patient. I thought that I could, without seeing the animal, and by only comparing him with the ox that I had the care of, venture to say, that he would not save him. My prophecy was soon verified, for the animal died in a few days.

I had, in the meantime, visited him, and was not long in perceiving that he had the same symptoms as my first patient. Like him, this animal had a serous diarrhœa, and the matter ejected was very fœtid. We examined him a few hours after death,

and found exactly the same disorders which I have already described. Thus, with the same primitive lesion to combat—the same remedy employed—the same immediate result of that remedy—the same absence of all active causes which might produce the disease, or be followed by death in both these cases, we must naturally recur to the mercurial ointment, and attribute all the evil to that. The following case is perfectly convincing:—

CASE IV.

I was sent for to examine an ox which coughed very much, and by fits, and in whom the respiration was exceedingly laborious. The mucous membranes were red and injected, the pulse hard and frequent, and the rumination had ceased since the preceding day. I made every inquiry as to what could have produced this disordered state. I could hear nothing to which I could rationally attribute it, when I was told, as a matter of no kind of consequence, that, for some time past, the ox had been lousy, and that, to destroy the vermin, they had put round his neck a strong worsted cord impregnated with simple mercurial ointment. They assured me that the ox had licked this ointment, which the contact of the cord with the manger had left there.

After that I did not hesitate to pronounce that this disease had no other cause than the mercury. I was happy enough to obtain a speedy cure by means of bleeding, rowelling the chest, giving emollient drinks and clysters, and a cooling and mildly nutritive regimen.

These facts appear to me to be so conclusive, that it would be fastidious to add any thing in order to prove that it is dangerous to use mercurial ointment on ruminants. Nevertheless, as there can never be too much evidence in favour of truth, I propose, if it is agreeable to Messieurs the editors, to send them some further observations on this subject, and particularly some facts observed with regard to sheep.

(Journal Vet. Theorique et Pratique.)

Veterinary Jurisprudence.

HORSE WARRANTY.

ALLEN AND OTHERS *v.* PRING.

This was an action on the warranty of a horse.

Sir James Scarlett, for the plaintiffs, stated, that the plaintiffs were partners in a concern called the Scotch Ale Brewing Com-

pany, and that on the 10th of June, 1831, the managing partner, named Farquharson, purchased from the defendant a horse warranted sound, except as to the loss of one eye. It was observed at the time that there was a swelling about the hock of the off leg behind, but the defendant said that it was of no consequence, and would not prejudice the working of the horse. The plaintiffs then paid the price (£25) to the defendant, and set the horse to work in the dray, with a light load, but it turned out that the horse was decidedly lame, and unfit for the work. On the 22d of July, 1831, the managing partner wrote to the defendant that the horse was unsound, and desired him to take him away, and return the purchase-money. To this there was no answer, and the managing partner again wrote on the 27th; and then the defendant sent an answer, insisting that the warranty had been complied with, and refusing to take the horse or return the purchase-money. The plaintiffs kept the horse without working him till the beginning of October, when he was sent to Dixon's sale, and sold for about £14. This action was brought to recover the difference between the £14 and the £25, and also the expenses of keep for about two months—amounting together to £22.

Marshall, a veterinary surgeon; Mann, a farrier; and Brantley, a livery stable-keeper, stated, that the horse was spavined, and generally diseased in the hock of the left leg behind, on the 10th of June, when purchased by the plaintiffs.—The notice to the defendant, and the sale for £14, were proved; and evidence was given of the persons in the partnership, which was very slight as to one of them; but the Judge refused to nonsuit on that ground.

Mr. Pollock, for the defendant, after claiming to have the future advantage of the doubt as to the proof of the partnership, observed, that whatever fault the horse had was pointed out at the time of the sale to the plaintiffs; and that, at all events, the plaintiffs had no right to recover for the keep of the horse, because they might have sold him immediately after notice, or kept him, and brought their action for the difference in value. But he was instructed that he could prove that the horse was really sound at the time when he was sold to the plaintiffs, and that he was still sound, and in good condition; and if he could prove this, the defendant would be entitled to the verdict.

The person who purchased the horse at Dixon's sale stated, that when he bought the horse there was a swelling on one of the legs, which appeared to him to be the effect of long standing in a stable, and that it abated before he got with the horse to Enfield, to which place he had taken him immediately after the

sale. He sent the horse on trial to Mr. Vaughan, a farmer at Enfield, and, after trying and working him for two days, Mr. Vaughan paid him £21 for the horse. Mr. Vaughan was then called, and stated that the swelling and lameness had sometimes recurred, but that the horse answered his purpose very well, and that he thought him fully worth the price he had paid for him.

Sir James Scarlett, in reply upon this evidence, remarked, that as to the unsoundness, the evidence only corroborated the case of the plaintiffs; and that as to the keep, the plaintiffs might have kept him for the two months in order to put him in better condition for the sale at Dixon's auction.

The Lord Chief Justice put three questions to the jury. First, whether they thought the partnership sufficiently proved; secondly, whether the horse was sound at the time of the sale to the plaintiffs; and, thirdly, whether the plaintiffs had proved any facts to entitle them to recover for the keep of the horse. As to the first question, the evidence was certainly slight, but he thought there was some evidence. As to the second point, he thought there was hardly a question about it, for the horse was warranted sound, and it appeared from the evidence on both sides that he was not sound. As to the third question, he thought the law was correctly stated by the defendant's counsel, and there was no evidence that the horse was in better condition in consequence of his being kept for the two months.

The jury, disallowing the keep, found for the plaintiffs for £17.

PHILLIPS *v.* WOOD.

The plaintiff is an attorney, the defendant a vender of medicine for cattle.

This was an action to recover compensation for the injury which the plaintiff sustained, in consequence of the defendant having supplied improper medicine for a horse of his. It appeared that the defendant resided at Chippenham, and that application was made to him for a blister for the legs of the plaintiff's horse. The blister was applied according to the directions of the defendant; but instead of operating as a remedy, the legs became swelled, and the flesh sloughed, so that the horse was rendered entirely useless. The stuff supplied for the blister having been analyzed, it appeared that one part in nine was vitriol.

On behalf of the plaintiff a great number of the veterinary family were examined to shew that vitriol was highly deleterious, and ought not to be used at all in blisters. An equal number were examined on the other side, who stated that it was often

very successfully used in blisters. They differed as to the proportions which should be used: some of them said that 1 in 24 parts, others that 1 in 48 or 50 parts was sufficient; but none went so far as to say that 1 in 9 parts might be used safely.

Verdict for the plaintiff: damages £32..10s., being the price of the horse, and other incidental expenses.

(*Morning Herald.*)

Miscellanea.

THE OLD HORSE.

"No, children, he shall not be sold;
Go, lead him home, and dry your tears;
'Tis true, he's poor, and lame, and old,
But he has serv'd us twenty years!

"Well has he serv'd us,—gentle, strong,
And willing through life's varied stage;
And, having toil'd for us so long,
We will protect him in his age.

"Our debt of gratitude to pay,
His faithful merits to requite,
His play-ground be the heath by day,
A shed shall shelter him at night.

"In comfort he shall end his days;
And when I next to market go,
I'll cut across the shortest ways,
And set out earlier home, you know.

"We all are by the Bible taught
To pray for mercy ev'ry day;
We do, I trust—then sure we ought
To practise that for which we pray.

"A life of labour was his lot;
He always tried to do his best:
Poor fellow! now we'll grudge thee not
A little liberty and rest.

"Go, then, old friend; thy future fate
To range the heath, from harness free;
And just below the cottage gate
I'll go and build a shed for thee."

Part II.

"The wind is high, the night is dark,
And wide the barren dreary heath;
No star above, nor glimmering spark
Of friendly glow-worm shines beneath.

"To find the road, in vain my care;
I've lost, alas! an hour or more;
My weary limbs will fail me ere
I reach, I fear, my cottage door.

"The drifting snow comes down apace—
I feel it chilling ev'ry part;
I feel it lightly on my face,—
But, ah! how heavy at my heart!

"In vain my wife, my children sigh;
No well-known footstep treads the path;
And many an anxious heart and eye
Are trembling round my cottage hearth.

"But, hark! what footstep do I hear,—
Or is my wandering sense deceiv'd?
No, hark! again it comes more near:
By what kind friend am I reliev'd?

"Ah! good old servant, is it thou?
Welcome thy warm and friendly breath,
To pay thy master's kindness now,
And raise him from the bed of death.

"What! dost thou know me, cold and weak?
Thus bending to my panting side:
With grateful joy thou seem'st to speak,
And say, Up, my poor master, mount and ride.

"And didst thou range the heath for me,
Not home at my accustom'd hour?
Thanks, gracious God! for here I see
Alike thy goodness and thy power.

"First on my knees in humble praise
To heaven awhile I lowly bend,
While hands and heart I upwards raise—
And now for home, my faithful friend!"

(Annual.)

The Resurrection of a Horse.

The following circumstance appears so incredible, that, had we not received the account from a gentleman on whose veracity we confidently rely, we should not have introduced it to the notice of our readers:—*Brough*, (*Westmorland*) *Jan.* 30, 1833.—Mr. Rudd, of this place, carrier to Stockton, had a favourite blind horse, sixteen years of age, which regularly travelled, from his early age to the present time, in cart or waggon. A few weeks ago, from over-heating, cold, &c., this horse was taken seriously ill, with loss of appetite, swellings of the legs, nostrils, and almost every part of his body. Every possible care, by medicine, nutritious food, &c., was had recourse to, with warm stable,

sheeting, and the most constant attendance on so deserving an old servant; but to no effect. The experience of the most enlightened practitioners on horses was lost; and Mr. Rudd, from motives of humanity, was advised to put an end to his misery by bleeding him to death. About ten o'clock, one severe frosty night, he was taken down to the common, a few hundred yards from the stable, and, on both sides of the neck, struck with a large sized instrument, from whence he bled, most freely, not less than fifteen or sixteen quarts. The poor animal, quite exhausted, gradually sunk down, stretched out his legs, and died—in the opinion of every one present. The cord was removed from his neck, and the party went home. Early the next morning, the blacksmith to take off the shoes, the skinner to take off the hide, and the pig-breeder to take possession of the carcass, were severally in attendance; but to the astonishment of all, nothing, except the blood, was remaining on the spot, without any vestige of the carcass being dragged away. Some time after, report was made, that the supposed dead horse was near the blacksmith's shop, at the lower end of the street. He was immediately taken under his old master's care; nutritious food offered, which he ate with good appetite; and, by such attention, in the course of *ten days*, he was restored to perfect health and strength, and enabled to perform his regular journey to Stockton and back that week; and he now continues in *better health, spirits* and *condition*, than he has been in for several years back. The poor creature, on recovery from his death-like appearance, had made his way to the adjoining hedge—had nipped the short grass, and followed the hedge, along the lanes leading from the common,—a distance of not less than half or perhaps three quarters of a mile, to where he was found standing in the street, very close to the shop of the person who was intended as his executioner.—(*John Bull.*)

SPORTING CALCULATIONS.

1st.—In the course of a long day's hunting, it is 10 to 1 in favour of a bold and good rider, well mounted, that he meets any accident at all.

2d.—Supposing he falls, it is 8 to 1 that either he or his horse is materially injured.

3d.—It is 6 to 1 the horse is hurt, and not the rider.

4th.—If the rider is hurt, it is 12 to 1 that a bone is not broken.

5th.—It is 20 to 1, if a bone is broken, that the wound is not mortal.

Ergo, $10 \times 8 \times 6 \times 12 \times 20 = 115{,}200$
$1 \times 1 \times 1 \times 1 \times 1 = 1$

Or, 115,200 to 1:—Or, stated at length,

That he has no fall, is.....	10 to 1
That himself or horse is not hurt	80 to 1
That it is his horse and not himself	480 to 1
That no bone is broken	5,760 to 1
That the hurt is not mortal	115,200 to 1

Ergo, out of 115,200 persons who go out hunting in the morning, only one is supposed to end his course in that way, from the effect of that day's diversion.—(From the *American Cabinet of Natural History.*)

Monthly Report of Diseases,

From April the 21st to May the 20th, inclusive.

HORSES.—Remaining under treatment..... 6
Anasarca 1, apoplexy 1, broken knee 1, bruised sole 1, catarrh 6, canker 1, diarrhœa 1, farcy 3, fever 1, glanders 1, grease 1, influenza 3, inflammatory fever 1, inflamed laminæ 1, mange 1, ophthalmia 1, sandcrack 4, spavin 1, strangles 1, sprain 5, stifle lameness 1, sallenders 1, swelled legs 1, fistulous wound 1.... 40

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DOGS.—Remaining under treatment 13
Asthma 2, cancer 1, canker 6, catarrh 2, casualties (serious) 1, chorea 1, carditis 1, deafness congenital 1, diarrhœa 3, distemper 18, ear effusion between cartilage and integument 1, epilepsy 5, enteritis 1, extraction of eye 1, fracture 2, fever 1, hernia perineal 1, hernia inguinal 1, hepatitis 1, hydrothorax 1, hydropsi pericardii 1, mange 17, nervous irritability 4, parturition 1, pedicule 1, ptyalism 2, puerperal fever 2, rabies 2, rectum, protrusion of, 1, rheumatism 1, scirrhous tumours 4, swallowing foreign bodies 1, stifle lameness 2, teeth, diseases of, 3, thyroid glands enlarged 2, tenesmus 1, tumour 1, vomiting blood 1, wounds 1, worms 1..... 100

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CALF.—Diarrhœa 1
PERSONS.—Bitten by rabid dogs 2

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There is little worthy of notice in the medical history of this month, except the continued absence in the metropolis of the epidemic of which we have heard so much in some districts. We have heard of it, indeed, in London, but it has only been in the practice of those who are always overwhelmed with business, or who magnify every case of catarrh into Pneumonia or Influenza.

Distemper and Mange in the dog have, as usual, rapidly increased as the summer approaches, but the former has not been so fatal, nor the latter so inveterate, as they will be by and by.

Cases of Farcy, or that bear a very close analogy to farcy, seem to be thickening upon us.

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XXX.

Phthisis Pulmonalis, or Consumption, in the Horse and Cattle.

GENTLEMEN,—It is my fate to have to treat to-night of another disease of our domesticated animals not yet admitted into our imperfect nosology, but which is occasionally observed in the horse, and destroys thousands of cattle; I mean phthisis pulmonalis—consumption or decline; usually the consequence of pneumonia or pleurisy, or both combined, but often running its course without any indication of acute inflammation of the thoracic viscera or membranes. I will suppose a case, fortunately not of frequent occurrence. I have a narrow-chested, flat-sided horse. It is attacked by pneumonia or severe catarrhal fever. My experience tells me, that I shall have a great deal more difficulty in subduing the disease in him, than in one deeper in the girth or rounder in the barrel. The lungs, deficient in bulk to a degree proportionate to the diminished capacity of the chest, have been overworked in supplying the quantity of arterial blood usually expended in the various purposes of secretion, nutrition, and motion; and the animal has evidently been distressed and blown, when an increased current of blood has been required under unusual and violent exertion. The lungs have, therefore, been predisposed to take on inflammatory action; and that inflammation has acquired an intense character under circumstances by which another horse would be scarcely affected.

Symptoms of Consumption.—I will, however, suppose that I have apparently subdued the disease. Do I dismiss him so quickly and so summarily to his work as I should another horse? No, far from it. He has been much emaciated by the disease; he often continues so; his coat stares, and his skin clings to his ribs, and his belly remains tucked up in spite of all my mashes, and carrots, and green meat, and medicine. His life and spirit do not return to him; he is listless; or if he is full of spirit and

willing to work, he is easily tired; sweating on the least exertion, and the sweat most profuse about the chest and sides: his appetite does not return, or perhaps it was never good, and the slightest extra-exertion puts him entirely off his feed. I observe him more attentively, and, even as he stands quiet in his stall, the flanks heave a little more laboriously than they should do, and that heaving is painfully quickened when he is in exercise. He coughs now and then—sorely,—and discharges from the nose a mucus tinged with blood, or a fluid decidedly purulent; the breath becomes a little strong, and, by-and-by, very offensive; while the pulse is always above forty, and strangely increased by the slightest exertion.

When many of these symptoms are developed, the animal will exhibit considerable pain on being tapped, or gently struck, on some part of the chest; and then, all at once, the cough becomes more frequent and painful—the discharge from the nose more abundant and fœtid—the emaciation, and consequent debility, more rapid, until death closes the scene.

Post-mortem Appearances.—The lesions which are presented after death are very uncertain. Generally there are tubercles; sometimes very minute, at other times large; they are in different states of softening, and some of them have burst into the bronchial passages, and exhibit abscesses of enormous size. Other portions of the lungs are shrunk, flaccid, or indurated,—hepatized,—of a pale or a red-brown colour; and there are occasional adhesions between the pulmonary and costal pleuræ.

Symptoms when not connected with Acute Inflammation.—At other times there is no previous disease deserving of notice, but there is cough more or less frequent, dry, or accompanied by nasal discharge; slight diminution of appetite, and that only apparent after unusual work; want of perfect condition; a degree of listlessness when not at work, but which immediately yields to ardour, scarcely perhaps to be restrained, when the animal is exercised; a little heaving of the flanks, and this only perceptible after exertion: and this will continue for months or even years, without any disease or apparent derangement that interferes with ordinary service and work. At times the horse will rally, the appetite will return, and the condition will improve; but this will last only a little while:—the cough will return from slight or unknown cause, and the listlessness, and want of appetite. Next will appear *hectic fever*, and the malady will run its fatal course.

This is a meagre account, gentlemen, but it is the best I can give you. Our veterinary authors either mention it not, or bestow only a few lines on the consideration of it.

Phthisis is exceedingly difficult to detect at its commencement; it may be confounded with almost every chronic affection of the chest: but in its later stage it is plain enough; and when its symptoms become too manifest to be mistaken, it bids defiance to all medical treatment.

Causes.—Is it *hereditary?* I have not sufficient experience to decide this point, which has not yet been mooted among us. One thing only I know, that in the few cases in which I have seen it, the horse has a great deal of daylight under him, and the side has been flat, and the belly tucked up, and the animal has had a great deal more ardour and willingness than physical strength. These conformations, and this disposition, I know to be hereditary, and thus far phthisis may be said to be so too. Of the influence of *climate* I cannot speak. I have no experience on the point. I can satisfactorily trace phthisis to inflammation of the lungs, chronic or acute, and I know that this conformation of which I have been speaking, disposes the horse to inflammation of the chest of the intensest character. I can believe that low and damp situations, or a variable and ungenial climate, may render horses peculiarly susceptible of chest affections; and I do know that all the absurd, or cruel, or accidental causes of pneumonia may lay the foundation for phthisis; and particularly I know that these causes, which tend to debilitate the frame generally, render the horse more liable to chest affections, and less able to ward off their fatal consequences. The most numerous instances of phthisis occur in those poor persecuted animals that are worn out before their time, and they are frequent enough among cavalry horses after the deprivations and fatigues of a long campaign.

Treatment.—I quit this unsatisfactory division of my subject for one yet more so,—the medical treatment of confirmed phthisis. I have no case of successful treatment of confirmed phthisis in my own experience, and I cannot find one on record. You must be guided by circumstances. If the horse is not very bad, and it is the spring of the year, *a run at grass* will always be useful. Sometimes it will seem to renovate the animal; but the apparent amelioration is too often treacherous. It should always be tried, and the disease may be so far subdued, as more readily to yield to after-treatment. The summer having set in, the medicinal effect of the grass ceases, and the flies tease and irritate the horse, and increase the too general irritability of the system. If the patient is taken partially or entirely from work, and submitted to your care, the course you have to pursue is plain enough. Consult the pulse and the membrane of the nose. Is the first quick and hard, and the second too much streaked with red?—

bleed, but remember that you have not to do with an acute disease, or with a constitution the strength of which is not sapped; your chief dependence here will be on that mode of depletion which I reprobated when speaking of acute disease. The exacerbation of inflammation you must endeavour to subdue, but you must not exhaust a constitution already debilitated. Small bleedings of one or two quarts, cautiously regulated by the pulse and the nasal membrane, and omitted when the one is quieted and the other becomes pale, will be exceedingly useful. *Counter-irritants* can never do harm, and these should be in the form of blisters, and not of rowels or setons; for you probably are combatting a disease or disorganization of the whole or the greater part of the lung, and the counter-irritant should spread as much as possible over the affected part. *Sedative medicines* should be perseveringly administered, and here, as in acute inflammation, our chief dependence will be placed on *digitalis.* Its action on the circulatory system in the horse cannot for a moment be disputed. It should be given in doses of one or two scruples, until a slightly intermittent pulse is produced, and that state of the circulation should be maintained by minuter doses. As a diuretic, *nitre* may be added, and the *pulvis antimonialis* as a diaphoretic.

Any *tonics* here? Yes, the tonic effect of mild and nutritious food—green meat of almost every kind—carrots particularly—mashes—now and then a malt-mash. Nothing further than this? You may try, but very cautiously, those tonics which stimulate the digestive system, yet comparatively little affect the circulatory one. Small doses of camomile and gentian may be given, but carefully watched and omitted if the flanks should heave more, or the cough be aggravated. Iron is not admissible in any stage of chest affection, or at least I can truly say that I have rarely given it without repenting that I had done so.

Conclusion.—After all, the treatment of phthisis is a most unsatisfactory subject of consideration as it regards the practice of the veterinarian. If, after the human being has been subjected to medical treatment for a long course of time and at very considerable expense, he so far recovers that life is rendered tolerably comfortable to him, he and his connexions are thankful and satisfied, and he will submit to many a privation to ward off the return of a disease, to which he is conscious there will ever be a strong predisposition: but the case is different with the horse; and this, the scope and bound of the human practitioner's hope, is worthless to the veterinarian. His patient must not only live, but must be *sound* again. Every energy, every capability must be restored. Can we cause the tubercles of the lungs to be absorbed? Can we disperse or dispel the hepatization? Can

we remodel the disorganized structure of the lungs? Our consideration, then, will be chiefly directed to the detection of the disease in its earliest state; the allaying of the irritation which causes or accompanies the growth of the tubercles—the mingled cause and effect—and thus arresting their progress, and by degrees causing them to become foreign, and in some measure harmless bodies, and which the absorbents will in due time remove. This must be the scope and bound of *our* practice—always remembering that the owner should be forewarned of the general hopelessness of the case, and that the continuance of our efforts should be regulated by the wish of the proprietor and the value of the patient.

Consumption in Cows.

I now turn to a subject sufficiently unsatisfactory, but connected with which there are some redeeming considerations, arising from the easier and earlier detection of the disease; the removal of some of its exciting causes; and, what is most important of all, the necessity not existing that the animal should be restored to the possession of every pristine energy in order to render her useful and valuable.

Symptoms.—The first symptom is that of which the farmer and the herdsman are so regardless, *cough*. One would think, that dearly-bought experience would convince these people that there are few things more to be dreaded than *hoose* in cattle. I have treated of this in a former lecture. The cough is at first sonorous and clear, and while it continues thus no great harm is done. While the cough is loud and clear, the lung is sound enough. But the inflammation, chronic or acute, that produces this cough, is that harmless? It is silently, if not rapidly, disorganizing the lungs, and the change of the cough will tell the extent of the disorganization. That farmer is wisest who attacks the cough while it is loud and clear; and he next deserves the character of a prudent man, who recognizes the first symptom of disorganization: and that is as plain to him who is accustomed to cattle, as is the variety of cough in the horse indicating the state of the lungs in that animal. The cough of incipient phthisis is *inward, feeble, painful, hoarse, rattling, gurgling;* and that probably for a considerable period before there begins to be any discharge from the nose or mouth.

Gentlemen, I would urge you to study this peculiar cough of incipient consumption in cattle. There is something almost as peculiar about it as there is in the howl of the rabid dog. There is little or nothing of spasm. *It is a painful and not violent pressing out of the air through passages half obstructed.* Some

good may be done now. The lungs of the cow have not been so sadly used as those of the horse, nor is the process of disorganization so rapid. The golden time is, however, suffered to pass by, because the animal does not seem to lose much flesh, and gives milk as abundantly as before. She was designed to accumulate flesh, and to give milk; and she will continue to do so; and the appetite, by which alone the means of doing this can be accomplished, will continue unimpaired long after local disorganization and mischief have commenced. Besides, she is not hurried beyond her will and her strength by the caprice or cruelty of her owner, and thus the progress of the mischief unnecessarily and rapidly increased. Weeks and months—shall I say years?—will pass on, and there will be nothing to indicate the formation of tubercles in the lungs, but the inward, feeble, painful, hoarse, gurgling cough. Study it, gentlemen, carefully. It will advise you of the existence of the mischief, while, perhaps, it is remediable; and the accuracy of your prognosis, even although the farmer may not at the moment listen to you, will afterwards materially add to your reputation.

Treatment of the early Stage.—You have two ways of saving the animal here. Your bleeding and digitalis may quiet the irritation of the lungs, or at least prevent an exacerbation of the disease; for although in some cases the next steps are a staring coat, hidebound, loss of flesh, and diminution of milk, yet much oftener the progress of the disease is hastened by carelessness or accident. The cow is exposed too soon after calving, or at other times unnecessarily exposed to the vicissitudes of the weather, while she is neglected and half-starved; thus she *gets cold;* and the lungs, already irritable by disease and disorganization, take on inflammation; and that becomes highly intense, and either kills the animal at once, or increases and hastens the change of structure in which phthisis consists.

Deceptive Nature of the Disease.—Here let me press on your minds a lesson of caution. You attack this new inflammation promptly and skilfully, and you apparently subdue it. Appetite, condition, a plentiful secretion of milk, return. *Is the cough gone? "the painful, inward, feeble gurgling cough?"* If that remains, there is mischief still,—irretrievable mischief. All you have done stands for nothing, unless you follow up your blow, and drive away the cough as well as the inflammation.

Slow Progress of the Disease.—If you are satisfied with what you have done, or the penurious and illiberal proprietor forbids you to proceed, weeks and months may again pass, and no cause for alarm may appear, because, as I have already said, the lungs of the cow, although irritable enough from the disease, will not

be rendered more so by ill-timed or cruel exertion; and the acute diseases of the lungs in the cow are more those of the investing membrane than of the substance; they partake more of pleurisy than of pneumonia. Another attack of acute inflammation may follow, and that again be subdued, until at length symptoms of irretrievable mischief, which no man can mistake, begin to appear. She wastes more or less rapidly; her hide sticks to her bones; her milk gradually diminishes; she becomes evidently weak; yet still she eats, *eats with almost undiminished appetite:* but the process of rumination, requiring long and now fatiguing action of the jaw, is more slowly performed. Then appears that which accompanies almost every disease of the ox, inflammation of the subcutaneous tissue. On whatever part of the animal you press, she shrinks; and if you press upon the loins, where this circumstance is always most evident, she will not only shrink under your hand, but probably moan with intensity of pain. The cough now becomes even more painful and frequent, and is accompanied by discharge from the mouth or nostrils of a purulent, or bloody, or fetid character. The offensive smell increases to an almost insupportable degree as the termination of the disease approaches.

Later Symptoms.—When this stage of the disease commences, or through the whole of its progress, diarrhœa often prevails, and that to a degree which the most powerful astringents cannot arrest; and the fæces are, like the other discharges, indicative of the putrid form which the disease is now exhibiting. The end is even not yet, but the animal clings to life with singular tenacity. Hectic fever is now established, distinguished by every symptom except profuse sweating. There is no cutaneous perspiration even now. The skin clings dry and scaly; *it strangely creaks* as the cow crawls staggering along. The discharge from the mouth and nostrils increases, and becomes even more fetid; the animal weaker, and, if possible, thinner; and yet she bears up, and eats, and slowly ruminates; and then, when the vital power is quite exhausted, and even with the food in her mouth, she falls and dies. One circumstance is very remarkable and characteristic. The mind and animal desires even of this comparatively dull and insensible being are roused to an extreme degree of intensity during the progress of this disease. The cow is frequently *almost continually at heat.* When she is impregnated, the œstrum goes not off; and the consequence of this continuance of excitement is, that she is exceedingly subject to abortion.

Long before the farmer suspects it, there is a deterioration in the character of the milk, even although the quantity should not

be materially diminished. It has an unpleasant taste—it quickly becomes sour—it spoils that with which it is mixed. The butter made from it is ill-flavoured; the cheese will not acquire the proper consistence. Some have said that the milk is of a bluer colour, and that it has abundantly more serum in its composition than ordinary and healthy milk. Some of the puzzling disappointments of the dairyman may be accounted for by the deterioration of the milk from a cow labouring under phthisis.

Post-mortem Appearances.—The first remarkable difference between the lesions presented in the lungs of the ox and the horse after death is the more frequent and complete adhesions, farther illustrative of the fact, that, in the ox, inflammations of the chest are in the great majority of cases those of the pleuræ, and in the horse those of the substance of the lungs. The substance of the lungs, however, is soon affected in the ox, as is the investing membrane in the horse; for there is nearly the same tubercular appearance, but generally less induration or hepatization: if there is any difference, it is that the tubercles in their state of hardness are more concrete than in the horse, and sometimes can scarcely be cut through. The tubercles here, however, are not confined to the substance of the lungs, but they are scattered over the pleura, both costal and diaphragmatic, and are even found within the duplicatures of the mediastinum. This is still farther illustrative of the difference in the origin of the disease in the two animals. Hydatids are also usually found about the lining membrane of the chest, or numerously and deeply embedded in the substance of the lungs.

Causes. Hereditary Predisposition.—Of one and a very frequent cause of consumption in the cow, I can speak with confidence, for I have had opportunities of observing and tracing it; I mean hereditary predisposition. I have rarely known the offspring of a consumptive cow that was not also consumptive. I recollect two dairies that were almost destroyed by this hereditary taint. If it is a heifer-calf, she may possibly live a little after her first calving, but then she usually sickens, and the disease proceeds with a rapidity unknown in the mother. This will be a very powerful reason for our having as little to do with these cases as we can, lest we entail a kind of pest upon our employers. The cow that exhibits the slightest symptom of consumption should be sent to the butcher immediately, if she is in tolerable condition, or got into condition as quickly as possible, and sold.

Epidemic.—It is often epidemic; or, although the cow may have previously had the seeds of the disease within her, there are certain seasons when they are more rapidly and fatally

developed. This is a fact well known to dairymen. While it is especially prevalent in low, moist, woody pastures, it is, even there, of more frequent occurrence, and more fatal in spring and autumn, and when the weather is unusually cold and changeable.

Change of Climate.—There is a vast deal, likewise, in the cow being suited to the climate, or rather being in her native climate, or one that closely resembles it. This explains the strange difference of opinion with regard to breeds. Every farmer is partial to his own breed, and undervalues those of other districts; and, to a very great degree, he is right. His cattle breathe their native air; they are in the climate to which by a slow and sanative process, and extending for many a generation back, their constitution has been, in a manner, moulded; and it is only after a long seasoning, and a dangerous one too, that the stranger becomes adapted to the temperature and degree of dryness or moisture, and more particularly to the soil and difference of herbage in which she is placed. There is more in this than is often dreamed of in the farmer's philosophy.

While there is derangement in every system, the respiratory one seems to suffer most, and a slow, insidious, yet fatal change is there oftenest effected. If a dairy of cows is removed from a moist situation to a dry and colder one, consumption will often appear among them, although a dry air is otherwise esteemed a specific against the complaint; but if they are taken from a dry situation and put on a woody and damp one, phthisis is sure to break out before the first season is past. There is no animal with so much difficulty naturalized in a foreign soil as the cow. I knew a lady who long tried in vain to naturalize the Durham cow in one of the northern counties of Scotland; but they all died of hoose or phthisis; and she could at last only effect her purpose by admitting one cross from the native breed.

Mismanagement.—I will not repeat what I have said of the causes of hoose, pneumonia, and pleurisy in cattle. All these diseases will degenerate into phthisis; and the causes which produce them will often produce, or lay the foundation for, consumption, without the intervention of these diseases. Consumption, like many other maladies, is principally to be traced to our absurd management of our domesticated quadrupeds, and equally to the strange extremes into which we fall of over-nursing cruel abandonment.

Swiss Cattle.—Hurtrel d'Arboval, to whom we are indebted for one of the best accounts of this disease that I am acquainted with, and from whom I have derived some useful hints, states a curious fact, that the Swiss cows are not subject to phthisis,

although they pass the spring and summer on the mountains, unsheltered, breathing the coolest and purest air; and in the autumn and winter are shut up in close and hot stables, where not a breath of pure air can reach them, except when they are driven daily and far through the snow to water. They, however, who have no upland pasture to which their cattle can be removed, and whose beasts rarely escape from the miserable huts in which they are confined and fed, lose many a cow from phthisis. Habit, and a constitution gradually formed by the influences of these changes on many a generation, had prepared the first for them, or had even rendered them in a manner necessary; but habit could not secure the others from the deleterious effect of empoisioned air, and unwholesome or insufficient food.

Want of Ventilation.—There is one striking fact, shewing the injurious effect of heated and empoisoned air on the pulmonary system. There are some cow-houses in which the heat is intense, and the animals are in one constant state of perspiration. The door and the windows must, however, be sometimes opened, and then the air blows in cold enough upon those who are close to them, and one would think could not fail of being injurious. No such thing; these are the animals that escape; but the others at the farther end, on whom no wind blows, and where no perspiration is checked, are the first to have hoose, inflammation of the lungs, and phthisis.

Treatment.—On the treatment of phthisis in cattle I have little to say, or rather it is comprehended in what I have said of this disease in the horse, with some slight difference, principally confined to the quantity of medicine. Here even more than in the horse appears the necessity of early treatment, and we have here fairer and better scope. We have the slower progress of disorganization, and we have the peculiarity of cough, pointing out the very commencement of it: but then, on the other hand, if we neglect our duty to our employers, or are not permitted to act in time, we have the increased difficulty, or absolute impossibility, of removing a disorganization so slowly formed, and becoming, as it were, an integrant and inseparable part of the animal. The same medicines, but in smaller doses, afford the best chance of success; but they must be long and perseveringly administered—much more so than in the horse, for the process of morbid growth was slower. Your attention, however, will be most of all directed to the removal of the cause of the disease, whatever it may have been. If that which has a tendency to prolong and to aggravate it is taken away, you may have a little better chance; but, the original cause, or the deleterious adjuvants continuing to act, you have no chance at all. I cannot point

out what steps you must take—you must make yourselves masters of the history of the case, and be guided by circumstances. Let the overfilled cow-houses be enlarged, and the close and hot ones better ventilated—let cruel neglect, and exposure, and starvation yield to more judicious and humane treatment—when cattle are fed on dry meat, let them have sufficient to drink two or three times every day—let those that exhibit decided symptoms of phthisis be removed from the dairy, not because the disease is contagious, but because it is undeniably hereditary: in fine, in a case where generally so little can be done in the way of cure, let nothing be omitted in the way of prevention.

THE MORBID APPEARANCES OF BRONCHITIS IN CATTLE ON THE ISLAND OF JAMAICA.

Report of the morbid Appearances on the post-mortem Examination of a Steer killed for that purpose, and supposed to be labouring under a Disease in Jamaica (prevailing among cattle only), and there commonly called "Cough:"—

"This steer, called Blueman, ten years old, had commenced to work in 1826. His first symptoms of disease were discovered about two years ago. No remedies were used; he was turned out, and left to nature, changing the pasture occasionally between the sea-side and mountain climate, and looked after, among others in the same disease, with care and attention, choosing for them always the best pasturage on the estate.

"Upon dissection, the tongue was found clean, and of its natural colour and appearance; the fine delicate membrane lining the trachea or windpipe, especially about the end next the fauces, was studded, and thickly covered, with a disorganized deposition, to the eye like hydatids, but fixed to the membrane itself; and not hanging down like the grape-bunch, and of various sizes, resembling herring-roe or fish-spawn. On being cut into, a substance turned out of a gritty calculous description, so firmly connected as scarcely to be separated; in some comparison like tubercles that form in the substance of the lungs or liver in the human subject, after long-continued disease, but of much larger proportion. This substance was traced partially along the canal of the whole tube, extending to the bronchia, and embedded itself eventually in the substance of the lungs, where alone it appeared accompanied by purulent matter, or pus of a yellow thick consistence. It was found in various parts of the lungs, in its substance, also adhering to its pleura externally, and the adjacent parts, as the pleura costalis, where some degree of

vascularity was evident. In traversing the windpipe, a small worm was discovered, like the end of a thread, or the shape of ascarides; but whether the effect of accident or connected with the disease we could not ascertain, being the only one found.

"The liver was also diseased, but seemed to have put on that action at a much later period than the parts already described. Tubercles containing the same gritty substance were detected in different parts of the organ, under the peritoneal covering, and not upon the surface, as on the pleura. On cutting into the substance of the liver, it was found to contain circumscribed cells of the same secretion all through."

"In another animal (a heifer in the last stage of disease), killed the same day, the morbid appearance was not found in the windpipe, nor any signs of its having existed there; but about the bifurcation of the windpipe, and commencement of the bronchia, at its junction with the lungs, the diseased appearance was accumulated in a much greater degree than in the steer; and in the liver was found a number of living insects, like a small flounder, having a mouth or proboscis projecting outward, and something of the appearance of an eye on one side, the other being regular and flat. On being examined by a magnifying glass, they seemed to have the power of motion when discovered, and resembled much the rot in sheep at home, in low marshy situations (if I recollect that disease): however, I mean a malady of that nature, very prevalent and fatal in some parts of England, where animalculæ are found floating in the liver like these. It would appear, as the gritty secretions are deposited in the substance of the lungs, that the surrounding parts put on a diseased action, and the organ itself, and even the air-cells, became degenerated, and formed a mass of corruption, *sui generis*."

A gentleman called on us five or six months ago, and told us that his plantation was, in a manner, devastated by a disease which commenced with cough, and afterwards assumed many of the characters of phthisis, and for which no remedy had been found. He described the cough to be as urgent and painful as the cough of bronchitis among our cattle. We gave him certain directions, and recommended the use of the common fever medicine, but said, that on any future consultation it would be more satisfactory if he could procure from his agent an account of the post-mortem appearances, on the examination of a beast that had been afflicted with this disease. He promised that we should have it; and he forthwith wrote to his agent, desiring that two *cough cattle* should be slaughtered, and that the surgeon of the plantation should transmit a report of what he found. This is

the report. It is well drawn up; and it will be read with interest by every one who does not deem the diseases of cattle beneath his notice. It is essentially our bronchitis, modified by difference of climate; but miliary tubercles usurp the place of the strongyli. On some future occasion we hope to be enabled to give an account of the result of the treatment which we have recommended for adoption.

This appears to be a disease most prevalent in low marshy situations, but too frequent and fatal every where in the West Indies. Young cattle are peculiarly subject to it; but it attacks beasts of every age. It is so fatal, that no means of cure are now attempted; but as soon as a beast begins to cough, he is slaughtered if in tolerable condition, or he is got into condition as quickly as possible and slaughtered. Cattle so attacked are called *cough cattle;* and there are droves of them upon every plantation of considerable size, with negroes, whose proper business it is to attend to them, and who change them about among the best pasturage that the plantation will afford. Y.

A CASE OF RUPTURE OF THE LUNGS IN A PONY.

By A. Henderson, *Esq., V.S. to the Queen.*

If you think the following communication worthy to occupy a small space in your next publication, I shall feel obliged by its insertion. The case is an unusual one, and your journal does not, I think, contain any similar record.

The subject of this narrative was a harness galloway, fourteen hands and a half high, and about fifteen years old. It was in perfect health on Wednesday morning, the 15th ult., and was taken out as hand-leader with three other ponies, for a drive of about seven miles. After completing that distance, the pony was seized with a violent fit of coughing, which continued during several minutes; but not evincing any further symptoms of distress, no notice was taken of it, and he returned in the evening in the same manner, apparently not distressed.

Shortly after his arrival in the stable, he began to exhibit symptoms of great uneasiness, and refused his food. On being removed into a box, he became more restless, frequently lying down, and when up walking round the box, raising and tossing his head, curling up his lip, and turning his head towards the brisket immediately posterior to the elbow, the skin on that part being in a constant state of perspiration. These appearances were accompanied by rather a weak pulse, about 75, and a most tremendous thumping from within, and with exactly the

same force on either side. The beats were pretty regularly 45 in the minute. The inspirations and expirations were very unequal; the act of expiration occupying four times the period of that of inspiration, and being extremely laborious.

Such was the appearance of the pony when I saw him on Friday morning, the 17th instant; and I was informed by the veterinary surgeon in attendance, that there had been very little variation in the symptoms from the first hour he had seen him, which was immediately after his removal into the box.

The treatment consisted in the administration of laxative medicine, combined with febrifuge, and clysters every two hours until the bowels were opened. He began to purge in the early part of the following morning, and the action of the bowels was kept up by means of occasional clysters until Saturday morning about five o'clock, when the pony died. Towards the latter part of the case his uneasiness increased; but the symptoms were never of so violent a character as to induce a bystander to conclude that the animal was suffering any great degree of pain.

Post-mortem examination exhibited the abdominal viscera in perfect health, except that the liver was rather paler than it is usually. The animal was excessively fat internally, which I scarcely expected from its appearance when alive. On removing the diaphragm, which was also quite sound, and taking out the lungs, we found very considerable laceration of the connecting cellular substance of the lobuli of the lungs. The lobuli were, in a manner, torn from each other in lines from the edge towards the centre of the lung, and extending, in some places, three or four inches towards the centre. The lesion seemed to be nearly equal on the anterior and posterior surface, dipping deep into the substance of the lung, but not reaching quite to the middle. There was the slightest possible effusion of blood; not three drops were extravasated. The pleura was sound; but there was very great extrication of air between it and the lung, and in the direction of the principal lesions. There were two points of adhesion to the ribs at the convex surface of each lobe, and exactly corresponding with each other: with this exception, the contents of the chest were free from disease.

When I first saw this case, there could be no doubt about the spasmodic action of the diaphragm; but the apparent cause of it, the violent fit of coughing, led me to suspect more than increased irritability of that muscle; and I concluded that I should find some laceration or rupture of it. I was not, however, prepared for this lesion of the lungs; but the cause of that lesion is now evident enough, and the cause of the spasmodic working of the diaphragm, and of the excessive force with which it con-

tracted, in order to press the air from the emphysematous bladders on the surface of the lungs, and also of the prolonged act of expiration. The case is a very instructive one, and I think you will deem it worth preserving.

ON THE ABSURD METHOD OF FEEDING CATTLE IN WINTER.

By Mr. Harrison, *V.S., Lancaster.*

Food being the natural stimulus to the stomachs of all animals, and when given in proper quantities, and of a sufficiently nutritive quality, the digestive powers performing their functions with energy, all the secretions of the body are natural and regular; the skin feels loose, soft, and oily; and the animal is in as perfect a state of health as his domesticated life will admit of: but if this is reversed, by forcing cattle to live upon food bad in its own nature, and consequently of an indigestible quality, the stomachs become deranged and disordered in their operations; the various secretions become altered, and the liver, lungs, heart, brain, kidneys, uterus, and, in fact, every part of the body is sympathetically disordered; and, finally, one or more of these particular organs becomes diseased.

It being, then, admitted that, for the due and healthy performance of the organic functions, food of a peculiar kind is essential, need we be astonished at any deviations from health, or chronic and latent diseased states of the digestive organs, which only await some exciting cause in order to be developed with all their concomitant symptoms, particularly when we consider the cruel and preposterous method of foddering cattle during the winter, in this and too many other neigbourhoods, exposed, as they necessarily must be, to a variable temperature upon the fells, or low, mossy, and marshy lands with which this county abounds, and dragging over the long and weary winter months with a scanty supply of their natural food, barely sufficient for the support of life, or, what is still worse, compelled to allay the craving of their appetites with straw (and that frequently bad, and supplied with a sparing hand) or bad hay, which cannot contain much nutriment, and which is highly injurious to the stomachs, by reason of its indigestible nature, according to the state in which it is found, and either its total want of stimulus, or its excess of that stimulus which is injurious. To the abstraction of the stimulus which good food imparts to the systems of all animals which receive it, I think I may venture to assert, that four-fifths of the diseases of cattle are entirely owing.

In like manner we may naturally account for the phenomena of catarrhs, inflammatory fevers, &c. occurring in the spring, particularly when the weather is mild and open, or the commencement of the spring weather sudden; vegetation is then rapid in its growth, and the application of the stimulus (although natural) thus suddenly applied, in combination with increased temperature, will be productive of disorder and frequent death; and which might, in a great measure, be avoided by a little attention and more liberality on the part of the farmer or grazier.

It is in these fell districts, where this method of winter-feeding is practised, that the superiority of the native long horn over other breeds is most conspicuous. They, from their native hardiness of constitution and thickness of hide and hair, being better able to bear the extremes of heat and cold, hunger, &c.

It is a well-known fact, that, in general, where cattle are allowed to run in a wild state,—in the state nature placed them, to wit, the uninclosed fells, commons, &c.—disease is very rare; simply because instinct teaches them to avoid all extremes, and they receive their food, though it may barely support life, unobstructed by art, and as it comes from the hands of a bountiful Creator. He formed the mountain and the valley, the flat and uneven land, without, I think, ever designing that the cattle should be confined to one particular place; and to each of these situations he has appropriated a variety in soil and herbage. Although, owing to the talents and ingenuity of many eminent men, the soils, as well as their produce, have been improved by the various agricultural processes; yet difference in situation, soil, and produce, must and will exist to the very end of time; for not all the tact or ingenuity of man can render all soils capable of producing grasses of an uniform quality, or possessing the same nutritive properties, or that can be acted upon in the same degree by the digestive powers.

Reasoning thus, we may with perfect ease account, why cattle removed from their native situation, whether it be from the mountain to the valley, or, *vice versâ*, to the produce of which their corporeal wants have not become habituated, will be predisposed to disordered digestion by such removal; and which predisposition will be excited into action by the food containing a greater or less quantity of stimulus than that to which they had for a length of time been accustomed.

Having thus briefly yet comprehensively premised, neither the farmer nor veterinarian need be surprised at any disease, whether it be epidemic or not, appearing amongst cattle which have been thus cruelly and ungratefully treated during a long and severe winter; for I feel assured that, if a contrary system were adopted,

viz., a plentiful supply of good hay during the winter, especially in situations where grass is not sufficiently abundant, with warm sheds to fold them in during the nights, and to screen them from any accidental storms that may happen in the day. By attention to this, farmers would not have to complain of so many losses in the spring and summer; and the veterinary surgeon would not meet with so many cases of obstinate and irremediable diarrhœas, coughs, &c. produced from maltreatment during that inclement season, and which only awaited an exciting cause, viz., fresh grass, or variable and increased temperature, in order to become more perfectly developed in all animals whose organic powers have not been able to withstand the shocks of absurd deprivation and severity. There are other animals, however, whose constitutional powers are stronger, and that have only been in part subdued, and gradually repair similar ravages by partaking of that aliment sent and ordained for their use and well-being by an all-wise and beneficent Creator.

These observations have been painfully forced upon my mind by the numerous applications which have been and still are made to me, to remedy coughs, diarrhœas, constipation, &c.; the causes of which I can trace to no other circumstances than those I have mentioned. Should what I have advanced be deemed worthy of insertion in THE VETERINARIAN, it may be a means of stimulating others, more competent than myself, to further researches into this most important part of cattle practice.

A CASE OF STRANGULATED RECTUM IN A HORSE.

ON the 5th of November last I was called upon to attend an aged horse, apparently labouring under enteritis. After bleeding and administering the usual remedies, no abatement of symptoms took place, and he lingered on until the 8th, when he died.

He had not passed any fæces from the commencement to his death; for the injections which were thrown up were quickly returned, bringing with them a quantity of very white coagulum. When I had thrust my hand up the rectum as far as I could reach, I found that the gut was much contracted; indeed, it would hardly admit a finger. On examination after death, I found a perfect stricture of the rectum: the gut was altogether impervious. It was produced by a little pendulous tumour of adipose matter, which by some means had been entangled round the rectum; and on different parts both of the small and large intestines, there were found several other little accumulations of fat, which

had detached themselves from the mesentery, but were appended by shorter pedicles or cords.

The large intestines were in a high state of inflammation.

We have received from the gentleman to whom we are indebted for this communication, an excellent dry preparation of this strangulation. We return him many thanks for it, and it will find an honourable place in our museum. We would have presented our readers with a cut of it, had not one or two drawings of strangulated intestine, which THE VETERINARIAN already contains, given a sufficiently clear idea of the manner in which these pendulous tumours twist themselves round different portions of the intestines.

Why are we forbidden to give the name of our correspondent? He will soon, we hope, favour us with another communication, and without such an interdict.

EDIT.

ON THE DISSECTION OF AND OPERATIONS UPON LIVING ANIMALS.

WE scarcely recollect when we have been more gratified than, happening a little while ago to be in company with one of the best physiological writers of the present day, and an excellent practitioner, too, he told us, that he was now in the habit of perusing, with variable but always considerable pleasure, our monthly periodical. He read it for the purpose of comparing, and there only, in the present state of veterinary literature, could he compare, the character of disease in different animals, so curiously modified by their structure and habits, and food and treatment. He thought that he had obtained a clue to the right understanding of one or two things that had been previously enveloped in mystery: he spoke in terms of high praise of the account lately given of some diseases in the quadruped, which bore evident affinity to the epidemic that, at no distant period, swept away so many human beings: he lamented the untimely decease of our friend Castley, whose accuracy of observation and philosophic spirit of inquiry he warmly eulogized: and he spoke of certain lectures lately published in the Veterinarian.

He threw out a hint, which may be useful to some of our correspondents, that, in his view, and, he was sure, in the estimation of our brethren generally, the value of our work would be increased by abandoning all general speculations and theories, *and confining ourselves to what was strictly veterinary*;—it was veterinary physiology and veterinary pathology which he and we

wanted most to be acquainted with—he, as beautifully illustrating some of the principles of his own practice, and now and then (and he liked it not the worse for that) convicting him of error in physiology and practice too—and we, as containing that which most of all came home to our business and bosoms.

The conversation was a lengthened one, and towards the close of it he confessed, that the few glimpses which we had afforded him,—too few and far between—of *genuine veterinary physiology and pathology,* had given a colouring altogether new to some principles, and not altogether unimportant ones, both of theory and practice: he confessed that he had long doubted the accuracy of many an experiment on which several points of physiology were supposed to be founded, the legitimacy of the conclusion, which was drawn from experiments, by which, from their cruelty and protraction, nature was driven from her usual course, and completely outraged; and he was pleased to refer to certain language addressed to some of the great men assembled at the last dinner of the veterinary students, as having made a deep impression upon him at the time, and of the accuracy of which, and the hopes which the physiological inquirer might now justly begin to cherish, he was more and more convinced. The speaker stated his belief that "when physiology would, at some future time, be securely based on observation and experiment, the task would be effected by a veterinary surgeon. The human practitioner conducted his experiments almost at haphazard; not ignorant perhaps of the common anatomy of various animals, but ignorant of those minute differences of tissue and arrangement which influenced function, and thus influenced the result of his experiments, and frequently rendered them of little or no worth. It was *he alone,* to whom every day afforded lessons of comparative anatomy—to whom every day displayed fresh proof of the subtle, unsuspected, but controlling influence of function, by the minutest differences in structure; and whom, and most important of all, long habit had brought this to bear on the mysteries of pathology; it was he alone who was competent to and who would execute the task."

This was thought at the time to be bold, and somewhat unauthorized language, and our readers may be assured that we exulted at its receiving the cordial approbation of such a man.

The conversation then turned on the manner in which these researches should be conducted, and the gifted instructor and the humble vet. united in expressing their perfect detestation of that system of reckless, useless cruelty, in which so many indulged. They spoke of the disgusting indifference with which many otherwise excellent teachers and writers had alluded to,

and described scenes of almost incredible barbarity. They lamented the incautiousness with which some lecturers were, even at the present day, in the habit of expressing themselves on these points; excusing, if not actually lauding, the cold-blooded inflicters of torture that would have disgraced the dungeons of the inquisition; and they both cordially agreed, that the true principles of physiology and pathology would be best learned by a careful observation of proceedings of nature in health and in sickness, and among as many as possible of the various classes of animals. A perfect knowledge of healthy and of diseased structure—observation of the living, and examination of the dead,—no tortures of ours interrupting the natural course of things, would a little more slowly, but alone, with certainty, place the sciences of physiology and medicine on their proper basis. We had scarcely parted, when the veterinary practitioner met with a little book worth its weight in gold, "Letters to a young Naturalist, on the Study of Nature, and Natural Theology, by James L. Drummond, M.D.;" and one of these letters was so much in point on the subject of the conversation alluded to, and contained advice so excellent and so creditable to the writer, that we determined to lay it before the veterinary public. We cordially subscribe to every word of it; and when the veterinarian takes up the pursuit of physiology, let this be his instructor and his guide.

Y.

"If you have not read of the experiments made by anatomists on living animals, you will have an imperfect idea of the horrible excesses which are committed. The slightest matter of the merest curiosity is made the pretext for mangling living animals in the most dreadful way that can be imagined. It is not always, I must observe, in consequence of a theory being formed, and a belief that, if proved true, it might be of importance to our species, that experiments are made to determine its correctness or fallacy. In France, especially, the most barbarous cutting up of living animals is pursued with a savage and reckless enthusiasm, not for the purpose of verifying a probable, and, if true, important conjecture, but to ascertain what effects are produced by such butchery:—I hesitate not to use the word, for it is the fittest that could be selected. Experiments of this description are unhallowed in their nature, and they will, almost always, be unsatisfactory in their result to a rigid investigator of truth; for a conclusion can seldom be depended on, which is derived from observation of a mangled suffering creature bleeding under the dissecting-knife.

"That experiments have sometimes led to a little increase of certain knowledge, I know; but their frequent repetition after all has been proved by them that is necessary, every humane man must deprecate; and still more is it to be regretted that the prosecution of experiments on living animals is *recommended* to students, to boys, as a useful mode of employing their time and improving their minds. I can find no excuse for any man, who will dissect living dogs, rip up their bellies (or, as the softened phrase is, lay open their abdomen), cut out their stomach, or spleen, or kidneys, or perform other dreadful mutilations, merely to satisfy a feeling of curiosity; and still less do I think that he can be excused for recommending such practice to his pupils.

"One would suppose that the determining such a question, as whether, in vomiting, the stomach acts alone, or is assisted by the diaphragm and abdominal muscles, or is altogether passive, would scarcely be thought worth the sacrifice even of one dog—by any man, at least, who had ever himself felt what pain is, were it but that from the prick of a needle, or of a thorn lodged in the finger. Yet this unimportant matter, this subject of curiosity alone, which is not of the *slightest consequence*, whatever way it might be settled, has been the cause of innumerable living dissections, the very least of which is sufficient to make one's blood run cold. Let any one who has ever experienced nausea and sickness for ten minutes, think what must be the sufferings of a creature whose belly is ripped open and emetics injected into its stomach; or what must be the agony produced by cutting away its stomach altogether, and sewing a bladder in its place—thereby substituting, for the purpose of experiment, an artificial stomach! These and similar barbarous but *really useless experiments* have been repeated over and over, with a perseverance which is perfectly disgusting. Think of a dog being tied down to a table, the whole fleshy walls of its belly being cut away with a knife, and experiments made on it in that dreadful and pitiable state, for the purpose merely of ascertaining whether it will vomit or not. 'An animal,' Magendie observes, 'still vomits though the diaphragm has been rendered immovable by cutting the diaphragmatic nerves: it vomits in the same manner, *though the whole abdominal muscles have been taken away by the knife,* with the precaution of leaving the linea alba and the peritoneum untouched*.'

"Now, you will observe that I do not mean to inculcate the positive abstinence from experiments on any account whatever, for there may be circumstances which will fairly warrant their adoption; though a humane or just man will never have recourse

* Magendie's Physiology, translated by Dr. Milligan, ed. 3, p. 327.

to them, either for the purpose of determining a question of mere curiosity, or of light importance; neither will he repeat them unnecessarily. But the practice, especially of the French physiologists, is very different. They torture animals innumerable, almost without end or aim, farther than *hoping* to get at something; like a child who breaks a watch in pieces, thinking to obtain thereby a knowledge of the reason why it ticks. Many hundred dogs have been dissected alive, to prove whether the stomach is active or passive in vomiting; but I would ask, when an animal is writhing in agony, struck with dismay and astonishment, with its belly opened and its bowels exposed to the atmosphere, are we to expect that, in all the horrors of this situation, the stomach will exhibit itself, or perform its functions just as if nothing had happened? I cannot believe it; and if ten thousand such experiments as this were made, there still will and must be a want of proof. The stomach may in such circumstances be passive, though in the natural state of the animal it may be active in vomiting; and, in fact, after all the cruelties which have been practised by physiologists, we do not at this moment know whether, in the natural and unmutilated state of an animal, the stomach contracts in vomiting or not,—and, fortunately, this is of not one straw's consequence.

"I believe, also, that little or no confidence is to be placed in the accuracy of conclusions respecting the natural functions of viscera drawn from observation of what occurs in animals labouring under *extreme suffering* and *terror*. The pancreas, for example, has always been considered as a gland similar to those which produce the saliva; but whether its secretion were exactly the same or different, its large size is a pretty good presumptive proof that the quantity of fluid it prepares is not very small. The duct or tube through which the pancreas empties its secreted fluid, opens into the first of the small intestines. Now, if a dog be tied down, and his abdomen be laid open, or, as I have already remarked, if, in vulgar phrase, his belly be ripped up, the hands introduced among his bowels, and the portion of intestine to which the pancreatic duct goes be slit open, can I, in fairness and truth, trust to any result in this case which may be obtained from observation of the quantity of fluid secreted by the gland during so horrible a process? I say, it would be *unphilosophical* to have any such trust, and I would look on almost all opinions, formed on data so unnatural, as unsatisfactory and valueless. Magendie thus describes his mode of collecting this fluid:—'I lay bare the orifice of the canal in a dog, I wipe the surrounding mucous membrane with a very fine cloth, and I wait until a drop of liquid passes out: as soon as it appears, I suck it up with a *pipette*, an instrument used in chemistry. In this manner

I have succeeded in collecting some drops of pancreatic juice, but never enough to analyze it according to rule.' He also says, 'what I have been most struck with in endeavouring to procure pancreatic juice, is the smallness of the quantity which forms it: a drop scarcely passes out in half an hour, and I have sometimes waited longer for it. It does not flow more rapidly during digestion, but, on the contrary, it seems slower. I think it is generally more copious in young animals*.' At page 212, however, of the same work, the account of the quantity secreted is a little different. 'Sometimes,' he says, 'a *quarter* of an hour passes before a drop of the fluid springs from the orifice of the canal which pours it into the intestines;' and in the next paragraph he observes, that he has seen 'the flowing of the pancreatic fluid take place in certain cases with considerable rapidity.' The term *considerable rapidity* is very vague; but it shews that the secretion was in some cases much more copious than in others, and is a farther proof of the great uncertainty that always must and will attach to experiments of this character.

"But it may be objected, that a similar exposure of the bile-duct shews that the bile is constantly pouring from *it* into the intestine. But if we suppose, as has been generally done, that the pancreas is in truth a salivary gland, we may readily conceive that, as in those of the mouth, the effect of terror and acute pain will be to suspend its action; for every one knows that both of these cause a great decrease or suspension of the flow of the salivary secretion, and an ardent desire to take drink. This is very obvious in tedious surgical operations. If, therefore, pain and terror suspend the action of the salivary glands in the mouth, we may well suppose that the same causes will suspend the secretion of the pancreas.

"I believe myself to be amongst the last persons who would be inclined to throw any impediment in the way of improvement or knowledge; but *I most conscientiously believe*, that, in attempting to excite your detestation of such cruelties, I am speaking the language of *truth*, as well as of mercy. What, again, is to be expected of a young medical man who acquires a taste for dissecting living animals? Is that the way to pursue his studies with advantage? Is it not most likely to draw him from the legitimate study of his profession? In place of storing his mind with a knowledge of chemistry, materia medica, human anatomy, and the other fundamental branches of medicine and surgery, he is employing his time in cutting up living cats and dogs, in the hope, perhaps, that he too may become a discoverer; or as likely,

* Magendie's Physiology, translated by Milligan, ed. 3, p. 457.

it may be, from mere idleness. I am sorry that in our own islands it is common among teachers of anatomy to recommend the practice of vivisection to their students; but, then, this recommendation is merely to 'make experiments on the lower animals.' Yes; but this making of experiments includes every species of cruelty that the most savage ingenuity can invent: it includes sawing off portions of the scull and paring away the brain in slices, to see what effect is produced by wounding one part more than another!—it includes the starving of animals to death, for the purpose of ascertaining the appearance of their stomach!—it includes the tying of ligatures on the bile-duct, the thoracic-duct, the pylorus, and other parts, all which is accompanied with excruciating torture to the victim operated on!—it includes the laying bare of the heart, to observe the strength of its action; dividing nerves, cutting away viscera, and many other operations which are accompanied with the direst cruelty, and nine-tenths of which, after all, relate to matters of *curiosity alone*, and lead to *no practical benefit* of any kind!

"It may be curious enough, that, when a particular part of the brain is wounded, the animal has a tendency to move forward; when another, to move backward; and when a third and a fourth, to turn round; but I cannot think the knowledge of these circumstances by any means worth the price it has cost; and, after all, it merely shews what takes place when the brain is denuded, and wounded, and, consequently, its *natural* function deranged, if not destroyed. Putting aside the sufferings of the thousands of animals which have been sacrificed in experimenting and exhibiting these phenomena in lectures and demonstrations, I cannot but think that the witnessing of such cruelties must have a very demoralizing effect. I cannot conceive how a person can become coolly reconciled to the sight, let alone the practice, of such murderous acts, and continue to retain proper feelings of humanity for his own species. In this I may be wrong; but whether or not, I am satisfied that to recommend to students the pursuit, or even to exhibit to them the view, of such dissections as I have adverted to, is to run the risk of making them at once cruel and speculative, and at the same time neglectful of those branches of solid knowledge which will qualify them to be truly useful in their profession.

"I know it is often urged, that medical knowledge has been greatly improved by experimenting in this way on animals. That it has been a little, I will grant, but only a little, for the phenomena which take place in animals will often not apply to ourselves in the practice or treatment of either wounds or diseases. Experiments to determine the action of poisons, and ascertain their

antidotes, are perhaps, or at least were, more allowable than any others; but the discovery of the stomach-pump is of more value than all that ever have or could have been made. And yet, so differently do poisons act on different animals, that no observation drawn from their action can be applied to man. Hemlock, as every one knows, is a wholesome food for the goat, but it poisoned Socrates; while, on the other hand, a dog will be destroyed by a quantity of nux vomica which a man can swallow with impunity.

Corrosive sublimate is fatal to the *dog*, even in a small quantity, but to *horned cattle* it may be given in a very large dose, with *impunity*. *Arsenic* may be given to the *horse* in a dose of the eighth of an ounce, and, in veterinary medicine, is a valuable tonic. Even these are experiments cruelly made, and from which no practical or useful knowledge can be gained.

ON THE EXTERNAL CAUSES OF DISEASE.

[Aerial Poisons, &c. &c. continued from page 270.]

By Mr. W. F. Karkeek, *V.S., Truro.*

We concluded our last paper with stating, that "the formation of carbonic acid gas does not take place wholly in the lungs, but by the immediate union of the oxygen of the atmosphere with the carbon contained in the venous blood all over the body."

A great difference of opinion has existed for some time on this part of our subject.

We have already produced sufficient proof of the absorption of oxygen into the system. That carbonic acid is exhaled is admitted by every one; and it is likewise almost generally admitted, that whatever be the oxygen abstracted, the quantity of carbonic acid formed is nearly, if not altogether, an equivalent; for the same causes which affect the consumption of oxygen have an equal influence upon the formation of carbonic acid gas.

But this cannot be the only source of carbonic acid gas contained in the blood, as it has been shewn by Dr. Edwards, Davy, and others, that certain species of animals can exhale in a given time as much carbonic acid in hydrogen as in atmospheric air. There must be, consequently, some other source whence it is derived. Gurine, Chevreul, Magendie, and others have proved by their researches, that this gas exists in almost the whole extent of the alimentary canal. It must be evident, then, that it is formed in the process of digestion. It is calculated by Professor Brand*, that two cubic inches of this gas are contained in every

* Philosophical Transactions.

ounce of venous blood, and that the expired air contains about three and a half per cent. But the amount varies much; for if we examine the air expired a short time after a full meal, we shall find twice as much carbonic acid gas in the blood that there is when the stomach is empty.

From what has been stated, then, it appears reasonable to conclude, that the formation of carbonic acid gas takes place over the whole body. This theory also admirably explains the manner in which animal heat is formed; for wherever this gas is produced, there likewise must heat be generated. For to suppose that animal heat is maintained by the combustion arising from the union of oxygen and carbon in the lungs, would be to suppose these organs a furnace, where the refuse and stubble of the system were consumed, and, by the same means, with a commendable economy, animal heat produced.

The experiments of Dr. Stevens* have thrown some light on this subject. His views accord with those who reject the idea of the formation of carbonic acid as taking place wholly in the lungs. One of the most striking facts which the Doctor has brought into notice, is the powerful attraction which exists between oxygen and carbonic acid. It was so fully admitted amongst chemists that carbon in carbonic acid is united with its maximum dose of oxygen, that the idea of attraction between carbonic acid and oxygen, was rejected by every one: the fact, however, is clearly proved by the experiments of Dr. Stevens. If a receiver filled with carbonic acid, and closed by a piece of bladder firmly tied over it, is exposed to the atmospheric air, the carbonic acid, notwithstanding its superior specific gravity, rapidly escapes, and does so without the exchange of an equivalent portion of atmospheric air; the bladder is, consequently, forcibly depressed into the receiver. If the converse of this experiment be tried, and the receiver, containing atmospheric air, be tied over with a piece of bladder or thin leather, and then be immersed in carbonic acid, this gas will so abundantly penetrate the membrane, and enter the receiver, as to endanger its bursting.

There are many phenomena connected with the blood, that Dr. Stevens has noticed, which it would be impossible to notice here; but in order to understand the application of the attraction which we have just pointed out between oxygen and carbonic acid, it will be necessary to be aware of the following facts:—All acids impart a dark colour to the blood. With respect to most acids, this colour remains, although the added acid be

* Stevens on the Blood.

afterwards saturated. Carbonic acid forms an exception, for on the removal of this ærial acid, the blood resumes its bright arterial colour.

Alkalies, like acids, darken the colour of the blood, but salts produce a bright and vermillion colour, when added to the colouring matter of the blood. The alkaline carbonates require particular notice. The acid is so feebly held by the base, that in some respects they conduct themselves as alkalies; and in particular will restore the blue colour to the reddened litmus. Dr. Stevens believes that this circumstance has led some chemists of great celebrity to admit the presence of free alkali in the blood, whilst he takes an opposite view, and believes that in venous blood there is a superabundance of free carbonic acid, which, however, is soon removed by exposure to air. This opinion seems to be confirmed by the fact, that if water holding carbonate of soda and carbonic acid in solution be added to the blood, a deep venous hue is produced. After a short time, by exposure to the air, the carbonic acid is removed by the attraction already noticed, and the blood is reddened by the carbonate of soda, the influence of which is no longer controlled by the redundant acid.

The Doctor, it appears, does not regard the air as passively receiving the carbonic acid as it is liberated from the blood, which had not only held it in solution, but actually imbibed it; he considers that it is actively removed by the attraction existing between oxygen and carbonic acid, which overcomes the weaker attraction by which the acid was united with the blood. When the blood has lost its carbonic acid, it presents the bright vermilion tint which naturally belongs to its colouring matter, and salts when combined. When the venous blood gives up its carbonic acid, it receives in exchange a portion of the inspired air, which is chiefly at the expense of the oxygen.

From this it will be perceived that the Doctor differs, in some respects, from the theory we have formed respecting the atmospheric air being received into the circulating current;—he supposing that it is only oxygen which is received by the blood in the lungs, and only carbonic acid which is exhaled. But we have, we hope, already satisfactorily proved, that nitrogen is taken into the circulation as well as oxygen. The following experiment of Sir H. Davy will confirm those already given. Sir Humphry respired 18 cubic inches of common air during one minute. Before the experiment this air was found to contain 9.3, and after it only 4.1 cubic inches of azote, shewing that 5.2 cubic inches had disappeared. This experiment was variously repeated with the same result, and its accuracy has been subsequently confirmed by Dr. Henderson and others.

The experiments of Spallanzi render it certain that reptiles absorb azote; and Humbolt and Provençal have ascertained that the same effect is produced by fishes.

The experiments of Allen and Pepys, to determine the change produced in the air by respiration, form a valuable confirmation to those already stated. These experiments were made solely on the respiration of birds. After one hour and twelve minutes respiration, the amount of gases employed being originally

	Oxygen.	Azote.	Carb. Acid.
Cubic inches....	245.59	61.45	——
There remained..	195.61	90.11	21.27

shewing a loss of oxygen beyond the volume converted into carbonic acid, and a gain of 28.70 of azote.

From what has been adduced, it appears sufficiently obvious that the atmosperic air is received into the circulating current; but the mode and channel by which it is conveyed still remains to be explained. For, if the explanation of the phenomena rests on chemical principles, those principles cannot be depended upon unless they accord, in all respects, with the anatomy and physiology of the lungs, by which the assumed process takes place.

The ramifications of the pulmonary vessels are described by Percivall and others, as accompanying those of the bronchii, and, like them, divide and subdivide, grow smaller and augment in number as they approach the air-cells, upon the internal surface of which they terminate in extremely delicate, thin, and transparent capillary tubes. From this description it is evident that no immediate contact can take place between the air and the blood; for the thin transparent side of the vessel, if not that of the air-cell itself, must ever be interposed; so that, whatever this influence be, it must take place through these membranes.

We now beg to refer our readers for an explanation of the phenomena to Sir E. Home's and Bauer's examination into the structure of the cells of the human lungs, with a view to ascertain the office they perform in respiration*. The first new fact discovered in the course of this inquiry was, that although the common minute injection used by anatomists for filling the bloodvessels, when thrown in by the trunk of the pulmonary artery, while the cells of the lungs are empty, returns again by the trunks of the pulmonary veins; yet, when thrown in by the veins, it is not returned by the trunks of the arteries.

Another fact was discovered—that, during the momentary distention of the air-cells, an interruption is produced between the

* Philosophical Transactions, 1827.

arterial and venal circulation in the lungs, the blood being carried no farther than the small arterial branches surrounding the air-cells.

Sir E. Home's description of a single cell, as it appeared on the field of the microscope, is as follows:—"When the internal cavity of a single cell was exposed, immediately behind its internal membrane, the branches of the pulmonary artery, injected with red wax, were seen ramifying, as arteries do in common; these were accompanied by branches of the pulmonary veins, larger in proportion than those of the arteries, more numerous, and having valves, at apparently regular intervals, to prevent regurgitation of their contents. Besides the arteries and veins, there were innumerable absorbents opening into the cavity of the cell; their valves were at very short distances, and in their course in the interstitial substance between the cells, they accompanied the veins. When the terminal branches of the pulmonary artery were traced, the injection was found to have stopped someway before the artery's termination, and the space beyond was filled with gas. The substance of the lungs, interstitial to the cells, when dried become transparent, and was found to be composed of a smaller order of cells, with transparent coverings that freely communicated with one another, as well as with the cavity of the large cell they surrounded."

From this account of the anatomical structure of the lungs, it is evident they are calculated not only to receive supplies from the atmosphere, but to convey a part of them, with the greatest rapidity as well as facility, to the heart; since the momentary interruption to the passage of the blood from the arteries to the veins, and the numerous valves in the absorbents, as well as those in the veins, are admirably fitted for that purpose.

As the object of this paper is not so much to explain the phenomena of respiration as it is intended to illustrate our subject, viz. that in diseases arising from aërial poison the blood may be contaminated by the poison being attracted immediately into the circulatory current, along with the atmospheric air, we have refrained from entering more minutely into this interesting subject.

We have seen that not only oxygen (the vivifying portion of the atmosphere) but that azote likewise is conveyed into the mass of the blood; and although we are wholly ignorant of its real use, yet the quantity of this gas that is consumed by respiration, when compared with its absolute amount, is so trifling, that one should think it must operate upon the well-being of life, in a way, and to an extent, that are not yet understood.

Throughout nature, air, in whatever manner concerned, seems to be indispensable to the support of life.

In order that the seeds of plants should produce and perfect their respective kinds, it is necessary that their shoots should rise to the surface of the earth, to enjoy the benefit of the air.

The instant animation commences, the communication of air is begun. Air is conveyed from the blood of the mother through the placenta in the mammalia; and, to meet the peculiar process of reproduction in oviparous reptiles or fishes, a system is constructed for causing air to have access to the receptacles where the eggs are deposited. The proof of the necessity of air in such cases is, that without air no incubation can be effectual.

"Fishes*, which deposit their eggs in water that contains only a limited portion of air, make combinations which would seem almost the result of scientific knowledge or reason, though depending upon a more unerring principle, their instinct for preserving their offspring.

"Those fishes that spawn in spring or the beginning of summer, and which inhabit deep and still waters, as the carp, bream, pike, &c., deposit their eggs upon aquatic vegetables, which, by the influence of the solar light, constantly preserve the water in a state of aëration. The trout, salmon, hucho, &c., which spawn in the beginning or end of winter, and which inhabit rivers fed by cold and rapid streams which descend from the mountains, deposit their eggs in shallows, on heaps of gravel, as near as possible to the source of the stream, where the water is fully combined with air; and to accomplish this purpose they travel for hundreds of miles against the current, and leap over cataracts and dams: thus the salmon ascends by the Rhone and the Aar to the glaciers of Switzerland, the hucho by the Danube, the Isar and the Save, passing through the lakes of Tyrol and Styria, to the higher torrents of the Noric and Julian Alps."

[To be continued.]

ON CALCULI, AND THE MODE OF REMOVING THEM, IN DOMESTIC ANIMALS.

By Mr. Dick, *V.S., Edinburgh.*

In No. 16, of "The Journal of Agriculture," I gave an account of a case of calculus, which was communicated to me by Mr. Pope, of Tarvis, Aberdeenshire, detailing the removal of the calculus, which in its broken state weighed eight ounces.

* The Last Days of a Philosopher, by Sir H. Davy, Bart.

The insertion of this paper in THE VETERINARIAN may not be uninteresting to the readers of that periodical:—

"When a disease is not of frequent occurrence, the pain and uneasiness which it produces great, and its nature obscure, the case, whether in man or in the lower animals, becomes extremely perplexing to the practitioner under whose care it may chance to fall. Of this description of disease in the lower animals are urinary calculi. And as diseases in these animals are only to be traced from a knowledge of the symptoms which they produce, I presume that any apology for offering an account of the following case will be deemed unnecessary.

"On the 26th of September last I received a letter from Mr. Adam Pope, Tarvis, Aberdeenshire, of which the following is an extract:—'Two days ago,' he says, 'a farmer sent for me to attend a mare of his, affected with what I consider to be incontinence of urine. She is fourteen years old; she had a foal two years ago, and was again stinted in the end of June last. The owner informs me that he never observed that any thing was the matter with her until after that time; and he therefore considers that some injury has then been done to her. The poor animal is now in a distressing condition. Every ten or fifteen minutes a small quantity of urine is suddenly evacuated, and so suddenly is she often compelled to eject it, that she is unable to place herself in the position which nature points out; the consequence of which is, that the urine running down the thighs and legs has completely excoriated them. To-day (23d September) I saw her frequently making painful and ineffectual efforts to void her urine, and exhibiting every symptom of acute suffering; and the urine which she has been enabled to void is tinged with blood. Until within these two days, she has continued to take her food and water as usual, but she now has a great thirst, and the disease is evidently increasing rapidly. I shall, therefore, feel extremely obliged by your favouring me with your opinion of her case. I have to-day bled her freely, and administered a dose of laxative medicine.'

"To this letter I replied, that it was in my opinion a case of stone in the bladder; that the bladder, and other parts connected with it, which are situated within the cavity of the pelvis, should be carefully examined, by introducing the hand into the rectum, by which means the bladder would be felt resting on the lower part of the pelvis, under the portion of intestine into which the hand had been introduced. It would thus, I observed, be at once ascertained whether my opinion was correct or not: for, if a calculus existed, it would be felt hard, or if any other disease existed in the bladder, it would be felt with equal facility. If, by this means, it was supposed that a stone existed, a sound

might be passed along the urethra, and it would crisp upon the calculus. Should this be found to be the case, there could then be no doubt on the subject, and the stone would therefore require to be removed by an operation. This, I also observed, as the patient is a mare, might be effected, perhaps, by simply dilating the urethra. Having introduced the hand into the rectum, the stone, if a small one, might be removed by a pair of forceps, when it had been pressed towards the orifice by the hand in the intestine. The circumstances of the case should, however, direct the proceedings; and that, from the shortness of the urethra in females there would, perhaps, be little difficulty in the operation.

"I further stated, that as there might be a good deal of disease induced in the bladder, from the long continuance of the calculus in it, the simple removal of the calculus might not, perhaps, remove all the effects which had been produced. I suggested, therefore, that it might be necessary to inject something afterwards into the bladder, to wash out any particles which might remain, or to allay the irritation produced by the long continuance of a foreign body in the part; for which purpose warm water might be used, or if there seemed to be much pain, a solution of opium, or a diluted tincture of the same, might be found of service.

"On the 19th of October, I received a letter again from Mr. Pope, saying,—'You were right with the case of the mare about which I wished your advice. There was a stone weighing eight ounces in the bladder, which I removed, according to your instructions, ten days ago. On introducing my hand into the rectum, and pressing downwards, I was surprised to find a large hard tumour; and having satisfied myself of its nature, I proceeded with the operation, by introducing the left hand into the rectum, and with it pressing the stone towards the opening of the urethra. I had thus a full view of the orifice; but finding from the size of the calculus that it would require an uncommonly large wound to allow of the extraction of the stone in one piece, I merely dilated the urethra by making an incision about an inch and a half in length; and then introducing a pair of forceps, I took hold of the stone, and broke it down. This was the more easily effected from the circumstance of the stone being of a conglomerated texture. I then gradually removed the substance piece-meal, which, when collected together, weighed upwards of eight ounces. After the operation was completed (which was done while the animal was standing), I injected a quantity of warm water into the bladder, to wash out any little particles which remained, and afterwards injected a very mild solution of sulphate of zinc. There remained, however, a good deal of irritation of the bladder, to correct which I gave small doses of the

tincture of cantharides twice a-day. Opium was afterwards used with benefit.'

"I am now informed by Mr. Pope, that the mare, when he left her in November, was again quite well, and at work. The natural action of the parts is restored, and she seems to enjoy all the benefits of good health.

"The greater portion of the calculus was transmitted to me, which I put into the hands of my friend Dr. Murray, Lecturer on Chemistry, for the purpose of having it analyzed. By the analysis, 100 parts were found to be composed of—

Carbonate of lime, about	40
Animal matter, apparently mucus of the bladder and albumen indurated	60
	100

"This, indeed, appears to be the composition of almost all the calculi which are found in the lower animals, though it is rare that they attain to the size of the one in question.

"Calculi in the bladder frequently occur in bullocks; and as small pieces of them occasionally pass with the urine, they are sometimes found to obstruct the passage, and threaten the life of the animal.

"The animal will then be seen to stretch himself out, for a few minutes, making ineffectual attempts to void his urine, stamp his feet with pain, and kick his belly as if suffering from colic. Unless he is at this time relieved, the pain rapidly increases, inflammation of the bladder follows, and it becomes ruptured either by over-distention, or from its own effort to force out its contents: the urine escapes into the cellular tissue, or the cavity of the belly, producing inflammation of the peritoneal coat, which is followed by dropsy and death.

"When the operation is to be performed on an ox, the chief circumstance to be attended to is this: On making the incision on the part where the calculi is retained, it is advisable to draw the skin a little to one side before making the incision through the skin, and, having done this, the urethra may either be raised out from its situation in the loose cellular membrane, with which it is here surrounded, and the incision made into the canal, while it is thus raised, or, if it can be done with readiness, the incision may be continued through all the parts, while they lie in their natural position. This latter operation, however, requires more dexterity than the other, and is also more apt to lead to untoward consequences; because, if the incision is not made freely, and at once through all the parts into the canal, the repeated incisions produce more or less laceration of the parts; and there is a con-

siderable degree of danger that, from this cause, some of the urine, as it escapes after the opening is made, will flow into the cellular membrane, and produce a troublesome if not a dangerous degree of inflammation and infiltration of the tissue.

"After the bladder has completely emptied itself of urine, the parts may be allowed to resume their natural situation. The skin having been drawn to one side before the operation was performed, will now be drawn over the opening in the urethra, and thus the wound in it will be closed. After the bladder has been emptied, the urine will not again pass along the canal for a short time, and thus the parts will have so far reinstated themselves by adhesion, and a deposition of coagulum, that the urine will at next evacuation flow along the natural passage, and the animal feel but little the effects of the operation.

"I have in my possession several calculi removed from oxen, by Mr. Laing, veterinary surgeon at Banchory; and Mr. Pope has also several times performed this operation.

"Where the disease exists in herbivorous animals, the small calculi which are found passing along the urethra, indicate a tendency in the constitution of the animal to favour their production; and as it happens that where one makes its appearance, others generally follow, it is a matter of some importance to know how they are to be easiest removed. Now, from the composition of the calculi in these animals, they may be dissolved in the bladder, and discharged in a fluid state.

"This may be done by employing muriatic acid, which, having a strong affinity for lime, will, by the administration of a sufficient proportion of it, dissolve the calculi, and discharge them with the fluid. And this would in some cases be the more readily effected, as it sometimes happens that the calcular deposite remains in a semi-fluid state for a considerable time in the bladder, of which I once met with a remarkable instance. A bladder was sent to me for examination from Fife, which, with its appendages, contained the enormous weight of about 14 lbs. of a mass of nearly the consistence of lime in a state of mortar. Wherever, therefore, a case occurs in which circumstances may render such an operation as above detailed inexpedient, or where, for example, the calculus is situated in the pelvis of the kidneys, muriatic acid should at once be employed; and if the calculi in our herbivorous animals are always composed of the same materials as given in the above analysis, the operation itself may be entirely dispensed with. A weak solution of muriatic acid might even be injected into the bladder, either in the male or female, by which the substances would be dissolved with great rapidity.

"I was recently shewn by Mr. Jerdon junior, of Bonjedward,

a calculus taken from the urethra of a pig, which, in its composition, much resembles those which are found in the human subject. The external surface, presenting a beautiful white crystallized appearance, was composed of a triple salt—the phosphate of magnesia and ammonia; the interior, a dark brown portion, also in a crystallized state, was composed of uric acid in combination with these phosphates. It thus appears that the pig, like man, being an omnivorous animal, has consequently a greater variety of chemical combinations in its calculi, than herbivorous animals."

At the time when this paper was written, it was supposed that a complete cure had been effected, and the mare for some considerable time did her work; but the symptoms ultimately recurred, and she was at length destroyed. The following account of her has been transmitted to me by Mr. Pope, and which does him the highest credit as a skilful practitioner and an honest man:—

Dear Sir, Tarves, October 2d, 1832.

Permit me to trouble you with the concluding part of the case which I first communicated to you about a twelvemonth back, "a case of urinary calculus in a work-mare," and which was publicly reported as having been successfully treated. We were, unfortunately, too sanguine in our expectations as to the final result; and candour and justice compel me to relate to you the concluding history of the case; and, if you think fit, you are welcome, so far as I am concerned, to lay it before the public. I have sometimes wished that other practitioners would favour us with an account of the health and condition of their patients a twelvemonth after their report of some supposed extraordinary cure.

'You are aware that when I returned to the country here after attending your lectures I found the mare nearly about as ill as ever. I then made an examination of the bladder; there was no new stone formed, but the urine was mixed with sand. I need not repeat the symptoms here, as I mentioned them in my former communication. By the advice of your assistant, I tried what effect muriatic acid might have upon the urinary secretion; but, as the mare could not drink her water when the acid was mixed with it, and finding it difficult otherwise to administer it, I was obliged, after some time, to give it up.

'I can hardly say that it produced any sensible effects: at times the urinary discharges would become less frequent, and, in consequence, the excoriations on the inside of the thighs would heal up; but this was also partly the case when no medicine was given.

'The poor animal having now for some time continued to lose flesh considerably, and there being no probability of amendment, I determined to finish the business by a post-mortem examination. I opened the jugular, and destroyed her by blowing air into the vein.

'As the symptoms indicated, the urinary apparatus was at fault: the rest of the viscera were healthy.

'On removing the intestines, the first thing that struck me was, the disproportionate size of the kidneys; and what rendered this disproportion still greater was, that disease had produced contrary effects upon them. The kidney of the left side was greatly enlarged, while that of the other side was reduced far below its ordinary dimension. On cutting into the right kidney, I found in its pelvis a calculus which weighed an ounce and a half, and throughout the tubular substance of the gland there were several other small calculi, weighing from a scruple to a drachm.

'To give to a person who had not seen the case a clear idea of the marks of disease which the kidney presented, is very difficult. Most of the tubuli uriniferi were enlarged into cysts, containing a mixture of sand, urine, and pus. The tubuli which were not enlarged (but these were few) contained the same. I cannot describe the parenchymatous substance of the kidney otherwise than by saying, that it was rotten, and crumbled down between the fingers. The left kidney, which was the enlarged one, was not so much changed in its internal structure as the other; but still the same mixture of sand, urine, and pus, was found in it as in the other, but not any calculi of consequence. In one part of it there was a collection of very thick pus, without any mixture, to the extent of about two ounces.

'I am convinced, from what I saw, that the mare could not have lived long, and that she would have died in consequence of downright emaciation. I am also convinced that the whole complaint was situated in the kidneys, and that it commenced there; that it was impossible to cure it; and that applications to the urinary bladder were absolutely futile.

'How far the disease of the kidney might be owing to diathesis or constitutional causes, I will not pretend to say; though I am rather inclined to think that the formation of sand, or calculi, is in consequence of the operation of causes of a general or constitutional nature. The presence of calculi in the kidney is the local development of a general tendency.

'If the present case be anywise gratifying to you, my purpose is served, and I am, &c.

'Adam Pope.'

THE VETERINARIAN, JULY 1, 1833.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

All of the following cases possess some singularity or novelty, and may be interesting to our professional readers.

Staggers,

Occasioned by falling backwards and pitching upon the Vertex.

On Saturday the 8th of last month, Mr. D. sent his groom with his mare to me, complaining that she had all the day before been unusually dispirited and dull, which they attributed to the effects of a violent fall she had had on the day previous to that (Thursday): as Mr. D. himself told me, subsequently, she did not, on the day after the fall, evince that playful humour in the stall which she was wont to do—not only not turning round and making show to bite at any one that went up to her, but even not taking notice of anybody. Still she fed quite well; lay down as usual; and appeared in other respects, in her pulse, her respiration, her countenance, even to me, in health. However, from the account I had of her, and from a crack there was in the skin, shewing that the fall had been a heavy one, I deemed it advisable to recommend bleeding and a full dose of purgative medicine. She was bled to four quarts on Sunday, and the physic was given on Monday morning. On Tuesday the medicine operated, and continued in brisk operation all Wednesday. All this time, the only alteration in her, perceivable by the groom, was continued and even augmented depression; but this he, for the last two days, had, in his own mind, ascribed to the medicine she had taken. Wednesday night, she was, he said, "very dull," even to drowsiness; and notwithstanding her physic was setting, refused her bran-mash, and ate but little of her hay. It was not until Thursday morning that her symptoms became of a character to alarm the groom, and urge him to seek once more for medical aid. I being

from home at this time, my friend Mr. Youatt kindly attended in my place. He found her in an almost comatose state, her head pressing against the back part of the manger—the breathing laborious, and somewhat stertorous. She shrunk when the vertex of the occiput was handled with any degree of force, and there was an uncertain balancing motion as she stood. She was with considerable difficulty got round for the purpose of better examination and bleeding: the occiput was evidently hot, and, being now a little roused, she would scarcely bear it to be touched.

The jugular was opened, but, when nearly four quarts of blood were abstracted, the pulse faltered, and she began to stagger and to blow. The vein was immediately pinned up, and I being expected soon to return, the after-treatment was left to me.

At half-past eleven o'clock (two hours subsequent to Mr. Youatt's visit), I arrived at the stable. I found her with her head again thrust against the manger; lethargic—listless—senseless almost; pulse slow and sluggish, but regular in its beat; pupils dilated; conjunctive membranes injected; pituitary membrane, on the contrary, pale and bloodless; breath cold; skin and extremities wanting their natural warmth. Being confined to the space of a stall, and that between two other horses, I was desirous for her to be removed, if possible, into a box not above fifty yards from the place. In our attempt to effect this, however, she fell, in turning round backwards out of her stall, and came with her side, with great violence, against a corn-bin, which stood directly behind her. Here she lay so completely wedged in, that, without doing her some great mischief, there was no possibility of effecting her removal: it was therefore thought best to knock down the partition between two stalls, and thus make a loose box for her in the very place where she lay. From this time, she became perfectly delirious, throwing herself about in all directions with terrific violence, and rendering all approach to her, while the paroxysm lasted, dangerous in the extreme. So soon as we durst attack her again, we secured her legs with hobbles, and thus rendered all her subsequent struggles and plunges to rise ineffectual, as well as void of injury both to herself and

to those about her. I could now examine the occiput. I found the small crack in the skin almost healed up; there was no swelling or puffiness whatever perceptible about the scalp of the vertex, nor any detectable fracture or displacement or irregularity in the bone, but some little increased heat.

I opened the temporal artery, and gave issue to a brisk and copious stream of scarlet-coloured blood, which mounted from the orifice in the form of a *jet-d'eau*, enabling us to collect much of it in the blood-basin. She lost six quarts (as nearly as I could judge) before the pulse indicated any sinking effect. After this, the head was closely shorn, and a blister rubbed upon the whole cranial surface. She continued struggling and moaning all the afternoon; indeed, at six o'clock in the evening, she was in so pitiable and apparently hopeless a state as to induce a friend of Mr. D.'s (who himself was from home at this time) to send for me, and beg that I would have her shot, for humanity's sake: and, I must confess, I was half inclined to do so. I, however, refused to give any such directions in the absence of her master.

At seven o'clock I visited her again. The groom said she had been more tranquil during the last hour. I remained with her for half an hour, and was myself somewhat surprised to observe how much less frequent and violent her frantic fits had of late become. I determined to put them further to the test, and had, with that view, the fetters removed from her legs. She lay quiet about ten minutes after this was done, and then, to the surprise of all present, arose and stood upon her legs. Next, she moved; but she made only one step at a time, and that an unsteady and faltering one: however, she did manage to walk two or three paces. She drank heartily of some cold water that was offered to her, and greedily devoured several mouthfuls of green meat.

By ten o'clock at night she had gained strength sufficient to walk round her box, which the groom told me she had been repeatedly doing. Her pulse now had likewise gained strength and become frequent,—60. Her skin and extremities were unusually warm; her mouth hot; her eyes more brilliant, with pupils to a degree susceptible of contraction from the light. She had staled

freely since she had risen, and dunged once a few soft balls. The blister not having taken effect (most of it, probably, having been rubbed off again), I had it repeated.

June 14*th*.—This morning she is quite a different animal from what she was yesterday at the same hour. She is now perfectly tranquil, and apparently free, or nearly so, from the violent pains she must have been enduring. She is picking about the litter with as much indifference as if nothing had been ailing her; having already this morning eaten heartily of vetches. Her pulse is 60; her skin and legs are comfortably warm, though the man informs me she had about six o'clock, A.M., a shivering fit. Her pupil is grown contracted again almost to its natural size. The blister has taken effect. She stales and dungs freely: her dung is in balls, and somewhat lighter-coloured than ordinary. I ordered her to have

Aloes Barbad. ʒiss.
Hydrarg. submuriat. ʒss.

June 15*th*.—She has continued to amend—ceased circling her apartment, and has eaten a considerable quantity of vetches, to which her diet is confined. The medicine purges her.

June 16*th*.—She now begins to feel the evil consequences of having battered herself about during her delirium. The lids of one of her eyes are rubbed bare, and have become swollen to that degree that the eye itself is quite closed. Her withers are also tumid and tender to the touch; but most of all so her legs, which have suffered much from her struggles during their confinement by the hobbles. They are all four much swollen, hot, and very tender on pressure, and so sore when she moves, as to almost compel her to stand motionless in one place: she cannot even muster courage enough to bend them, in order that she might lie down and take some rest.

June 17*th*.—She suffers more at present from her wounds and bruises than from her cephalic disease; in fact, of that she appears to be rapidly recovering. Purges still.

June 18*th*.—To-day she was walked out for half an hour very gently. She at first moved with much stiffness and apparent inability, and perhaps still more disinclination: after a time,

however, she amended both her pace and her flexibility, and in the end seemed much benefitted by her forced promenade.

June 21*st*.—The tumour has entirely quitted her eyelids. There are still troublesome excoriations in her hind heels, occasioned by the hobbles; otherwise she is recovered so much in health and spirits as even to run and bite at you on entering her box, a trick she was addicted to prior to her illness. I may, therefore, here close this report of her case, by saying, that there seems now no doubt whatever, ultimately, of her complete restoration; an event no less unlooked for by myself than by my friend Mr. Youatt.

Iodine in Farcy combined with Glanders.

The deserved estimation in which Iodine is held as a remedy for bronchocele in human medicine, coupled with the presumption that the thyroid body itself is of glandular composition, has induced some veterinary practitioners,—among others, myself,—to put the new mineral to the test in farcy and glanders. And although I have nothing favorable to report about it, still, what I have to say may serve as a beacon to direct future investigations in the same branch of inquiry. The subjects of its operation were two horses that contracted farcy and glanders whil absent from their own stables; or, at least, that became affected with the disease shortly after their return from having inhabited for a week the stables of an inn at which much post and coach work was carried on, and wherein, from the constant change of tenants, it was very probable that the contagion resided. To render my account the more intelligible and clear, I shall detail each case separately, beginning with that in which both farcy and glanders existed.

The subject was a horse in the prime of life, in good condition, and with smooth and glossy coat. He was sent to me with a complaint of being "off his feed." I gave him mass. purg. ℥ss; ordered him change of diet, on which he amended, and, indeed, seemed to have recovered. This happened about the middle of March.

On the 1st of April he was brought to me again for having a pustular eruption at the bend of the arm, over which the hair

had become matted and glued together, from the adhesive nature of the discharge that had issued from it. I hardly knew at first what to say about its being occasioned by an "injury," which was the opinion of the groom; on the contrary, connecting it with the antecedent indisposition, there was room for unpleasant suspicions. I ordered another aperient; dressed the wound, and gave directions for its being kept quite clean. The medicine operated briskly. Its operation was followed by an amendment in the appetite of the animal, which had been on the decline; but the sore had extended and become the size of a sixpence, though with a much clearer and healthier surface than it had previously presented.

April 10*th*.—Another pustule has broken just upon the plate vein, from which now can be felt a chorded chain of connexion between the two, and extended high up beyond the original pustule. The case is now confirmed farcy. Ordered mercurial alteratives; a blister over the chord. Dressings.

16*th*.—Spirits and appetite something improved. Local affection little altered. In fact, he continued, in regard to his appetite and spirits, fluctuating between being better and worse until May 10th, on which day the groom came to say that there had been a sudden and pretty copious issue of matter from the off nostril, though, at the time I examined him, I could not perceive any signs of such an occurrence. Having, however, no hopes of doing any good by the plan I was pursuing, I determined on putting him under the influence of iodine: I accordingly ordered three drachms of the mineral morning and evening.

May 13*th*.—An ulcer of the truly glandered character has made its appearance upon the off surface of the septum, with a tumour of the submaxillary glands. The iodine has turned the dung-balls of a blackish hue.

18*th*.—His appetite is indifferent: but I do not regard its decline as proceeding in any way from the effects of the medicine. The dose of iodine to-day is augmented to gr. v morning and evening.

27*th*.—A fresh ulcer has broken out. The legs swell, although he is in a place where he can freely take exercise.

31*st.*—By escharotic dressings the farcy ulcers have been almost healed up. The legs are less swollen. The submaxillary enlargement (which has been considerable) is manifestly diminished. The dung is not so dark coloured.

June 4*th.*—Declining again, both in general health and spirits. The near nostril (as well as the off) has commenced discharging. I augmented the dose to gr. x morning and night.

June 18*th.*—Progressing from bad to worse. The disease is making now rapid march in every affected part. All hopes of any benefit being derived from iodine appear now to have totally vanished; it was therefore deemed useless to persist. The horse was condemned to die the next morning.

The above case altogether will be regarded, I think, as satisfactorily shewing the inefficacy of iodine as a counter-agent in farcy and glanders, though it probably might be given in larger doses than it was here exhibited: still, I think, the quantity must be considered (if we may reason from analogy) of sufficient magnitude to warrant us in regarding it as having been put pretty fairly to the test. Indeed, in bronchocele it has proved more successful in *small* than in large doses.

Iodine in Pure Farcy.

Another case in which the iodine was exhibited was one of *pure farcy,* contracted under similar circumstances to what the last was. At first, his indisposition was such as to induce the groom to believe the horse had "caught cold" from change of stable.

March 22, 1833.—He was dull in the stable, and lacked his wonted activity and animation at exercise. His appetite was not so good as ordinarily. His pulse was 60. He looked rough and dingy in his coat. His hind legs were filled, and there seemed a disposition in him to fever. He had for years been kept high in condition, and but little worked. Purg. mass. ℥ss; to be given immediately.

March 24*th.*—Dung softened; appetite and spirits improved; legs less swollen.

26*th*.—The legs have taken to fill again. He seems inclined to be "humoury:"—repeat the aperient.

31*st*.—Physic setting. A chorded swelling, the volume of my wrist, is now perceptible along the inside of the off thigh, extending from the groin, where the lumps are larger, and more diffuse, nearly down to the hock. The tumefaction is hot, tender, and is accompanied with tumour of the lower part of the limb generally.

Take away two pounds of blood. Give calomel and aloes and diuretic ingredients in apportioned doses, daily.

April 1*st*.—The chorded swelling has entirely left the thigh; subdued, it would seem, by the timely venesection.

7*th*.—There being some recurrence of puffiness and tenderness along the thigh, he was bled again, and had the same medicine repeated.

10*th*.—The bleeding again had the desired effect: once more going on well.

14*th*.—The chord has again returned. Bleed four quarts, and have recourse to the same medicine.

17*th*.—The chord has lost much of its tenderness, and is certainly diminished in volume; but, this time, the venesection has failed to disperse it.

24*th*.—A drachm of strong camphorated mercurial ointment to be rubbed into the chord morning and evening. Tonic medicine (cupr. sulph.) given.

May 4*th*.—An eruption appears on the inside of the leg, between the hock and fetlock, more in the form of an excoriation than a regular farcy bud, issuing a yellowish sanious matter.

11*th*.—No material alteration; give daily gr. v of iodine.

13*th*.—Turned from the stable into a small field, the iodine being continued.

18*th*.—The limb for the first twenty-four hours decreased; since which it has become attacked afresh with tumour, heat, and tenderness. Increase the iodine to gr. x daily.

25*th*.—The limb has been rather augmenting in volume than otherwise; the sheath is also involved in the tumefaction. Increase the iodine to gr. xv daily.

30*th*.—The tumour of the limb and sheath is once more sub-

siding. His green diet seems to have much contributed to it; continue medicine; dose augmented to ℈j daily.

June 16*th*.—The sore on the leg is dried up, and the swelling greatly diminished.

23*d*.—One can hardly distinguish any difference in the size of the two hind legs, and the sore seems quite healed up. Discontinue the medicine, and let him go to work.

P.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

The Voice of Humanity, *published Quarterly*. *No.* 12, *June* 1, 1833.

We notice, with much pleasure, the publication of the concluding number of the third volume of this work, so praiseworthy in the object at which it aims, and conducted with so much talent.

The association for promoting rational humanity towards the animal creation, a purpose dear to every veterinarian whose mind is well constituted, does not content itself with vague, although perhaps eloquent, diatribes against cruelty towards the brute, but it is cautiously, yet zealously, pursuing a well-digested plan. It is not wasting itself in idle declamation, but endeavouring to accomplish, and is fast accomplishing, certain definite purposes.

The object which it is now striving to effect is, the removal of the slaughter-houses of the metropolis, and the beast market, which is held almost in the centre of it. The comfort, the health, and the personal safety of the inhabitants of the metropolis are plainly enough involved in this. The following extract from the present number will shew that "humanity towards the animal creation" is far more deeply connected with it than many would readily imagine.

That this, the first object of the association, and many an ulterior one, may be soon and perfectly accomplished, is our ardent wish; and our readers would contribute to their accomplishment, by subscribing to "The Voice of Humanity." It comes but four times in the year; and in good writing, and interesting and useful matter, they would have much more than their shilling's worth for their shilling.

"The arrangement of the cattle in the suburban cattle-markets is a matter deserving consideration. Let us describe the present system, which it is to be hoped will speedily be rather a subject of historic record than one of actual observation. In Smithfield Market there is not room to tie up to the rails much more than half of the cattle sent there for sale! The remainder are disposed of by being formed, in groups of about twenty in each, into 'rings' or 'off-droves,' as such divisions are termed. About two o'clock in the morning the Smithfield barbarities are at the height, and the constables, being sent into the market in the daytime only, are consequently not in attendance. The drovers surround the unfortunate bullocks which cannot be tied up in the market, and commence by aiming with their bludgeons blows at their heads, to avoid which they endeavour to hide their heads, by keeping them towards the ground. On attempting to run backwards, the bullocks are restrained by blows upon their hocks and legs, together with the application of goads; whilst, if they venture to lift up the head, a dozen bludgeons are instantly hammering on it, until again lowered to the ground. This scene of barbarity is continued until every bullock, which had previously come either from verdant fields or from the quietude of the grazing-stall, has been disciplined to stand quietly in a ring—their heads in the centre, their bodies diverging outwards like the radii of a circle: this is done that they may conveniently be handled by the butchers. The barbarity of Smithfield is at its height during the night; but in the daytime, by seeing the process by which one or more bullocks, when sold, are driven out of a 'ring' or 'off-drove,'—by seeing the hammerings with bludgeons on the head; the thrusting the goads into the nostrils of the animals to make them move backwards, after similar instruments had been applied to urge them in the contrary direction; by witnessing the mode of re-forming the 'rings' or 'off-droves,' which are constantly broken through by the withdrawment of purchased animals, as well as by the passing and repassing of carts and drays, some faint idea may be formed of the amount of needless barbarity inflicted, and of the consequent deterioration of the meat. Perhaps the following evidence, which is merely a selection from a mass, may give a better idea of the annual public loss in Smithfield (about £100,000 per annum), to which we are continually referring:—'I have lived 14 years in Smithfield,' said a very intelligent witness, Mr. W. Hickson, of the shoe-warehouse, who was examined before the select committee of the House of Commons, on the state of Smithfield-market and the slaughtering-houses in 1828 (p. 14, 15, 16), the appointment of which committee we

were instrumental in obtaining, " and I find it perfectly impossible to sleep in the front of my house on the Sunday night. The cruelty practised upon the cattle, in beating them into the ' rings,' no person can believe who has not seen it; and, as it is a matter very easily to be seen, I hope some of the committee (now sitting) will see it personally. Supposing a salesman to have twenty beasts (which could not be tied up), he will have them all with their heads in and their tails out; they form a ring; and in order to discipline them to stand in that manner, the drovers are obliged to goad them behind and knock them upon the noses. They strike them with great force upon the noses, and goad them behind, by which means they form themselves into ' a ring;' so that, at the period I speak of, there is a great deal of unnecessary cruelty. The cattle will stand in that manner, so perfectly disciplined, that, at breakfast time, there shall be twenty or thirty " rings" of this kind standing in the middle of the market. If the " ring" is broken by any means, they are all in the greatest anxiety to get them in again; and when the drovers are obliged to separate those " rings," and drive the cattle away, they have a great deal of trouble, and the labour of the men is excessive to get one single beast out. Indeed, if you can conceive first getting the cattle into a " ring," as I have stated, and if one is sold out of the ring at eleven in the day, the beast is ordered to be driven through fifteen hundred cattle, whichever way he goes out of the market, and the man is goading that beast all the way—if you can conceive men compelled to exercise this cruelty, they will not be very delicate of the manner in which they use it after a time!' "

" Mr. Charles Merritt, who had been ' a salesman about eight years,' thus described the scene, p. 44:—

" ' I have stood behind eight of these off-droves, and the cruelty which is necessarily exercised to get them to standroperly is very great indeed, and which, by tying up, might be totally removed, and is the cause of the great complaint which exists of the bruises and the wildness of the different animals when passing through the streets. I will describe simply the manner in which it arises. Perhaps after an hour's violence has been exercised towards the cattle, to get them to stand about twenty in each circle, after perhaps an hour's violence, or nearly so, before we can get them to stand, the beasts are knocked about the hocks sometimes, sometimes about the head. If the head turns outward, they are beat about the head till they are turned inward. The great cause of the inhumanity described arises from this circumstance, that when a bullock is driven, perhaps from the centre of the market, by the butchers' drovers, that

bullock will run into five, six, seven, eight, or nine of the droves before he gets out of the market: perhaps in every one of the droves that bullock is beat about the head for ten minutes before he can be got out of that drove, and he runs to another drove, from the circumstance of having been so beat about in the early part of the morning. Consequently, perhaps, this bullock is beat out of ten droves before he gets out of the market, to the injury of the animal very much indeed: oftentimes it causes blindness; and when it goes in the public streets, the bullock in that state, irritated by the violence committed, runs at any thing, or over any thing, or through any thing, because it is distressed to that extremity from this very circumstance, and which, by being tied up, would totally, or nearly so, remove that necessary violence.' "

Veterinary Jurisprudence, and Consultations.

Judson v. Etheridge.

This was an action of detinue for a horse, to which the defendant pleaded that the horse was placed in his charge to be fed, and that there was ten pounds due for keeping him, for which he claimed a lien on the horse. To this plea the plaintiff demurred.

Mr. Erle, in support of the plea, contended that the defendant had a lien on the horse for his charge. It had been decided by Lord Wynford that the trainer of a race-horse had a lien on the horse for his charge.

The Court, without hearing Mr. Mansell in support of the demurrer, decided that the plea was bad. The defendant had no lien under the circumstances: a livery-stable keeper had no lien, nor was there a lien for agisting cattle. The grounds of the decision by Lord Wynford were, that the trainer had expended skill and labour in improving the horse, and it was on such grounds that a lien was given to tradesmen on materials worked by them. The present case did not differ from that of a livery-stable keeper.

Judgment for the plaintiff.

Consultation.

——— presents his compliments to the Editor, and will feel much obliged to him for his professional advice relative to

a horse of his. The horse came into ————'s possession three months ago; and ever since has shewn a tendency to *looseness* of the *bowels*, or *scouring*. He has been, for the abovementioned period, on hard meat, four feeds per day; and for the last three weeks has had beans with his corn; but no alteration has taken place. The horse is otherwise in good spirits, and carries flesh, and is always ready to feed, but is, of course, soft in condition; and as he is a hunter of some value, he is not able to use any freedom with him in the field. ——— supposed, as the water is rather hard, that he would be better when accustomed to it; and, indeed, has attempted every expedient he could think of, short of giving medicine, or restoratives, which he has *not* as yet done; and he now wishes ————'s advice as to what would be best to be done towards stopping this looseness: the evacuations, however, are *not unnaturally frequent*, but always in a state of looseness.

Extracts.

Observations on Fractures of some of the Bones of Horses.

By M. Levrat.

It is no longer believed by veterinary practitioners, that fractures of the bones of horses are incurable: time and experience have done away with the ridiculous ideas which were formerly held on that subject. All veterinarians know that a fracture is reducible, and there is a chance of curing it when it is situated in a bone which has little motion, and is accessible to the manipulations of the operator and to the pressure of bandages, and especially when the splinters have not been displaced. But it appears to me that some modern authors have committed an error in advising, that on account of the uncertainty of the result, and the necessary expense of treatment, only horses of great value or of the choicest breed should be submitted to surgical care. In reality (and I am now alluding to fractures of the extremities), it is very seldom, however skilfully the operation may have been performed, that the animal is made perfectly sound: there remains lameness and weakness, to a greater or less degree, in the limb which has been fractured; and sometimes there is a slight deformity. In this state, therefore, it is seldom that the animal can be ridden or driven in a carriage long or rapidly without going sensibly lame; and such are generally the uses to which high-bred and valuable horses are put. They will then be, if not absolutely unfit for their work, at least very

unpleasant to use, even after the most successful treatment; they, therefore, can no longer suit the persons who possessed them, and who are mostly very jealous of the good qualities of their horses. One resource, however, remains, which is, to use them for breeding.

For heavy slow work, such as the waggon or the plough, it signifies much less whether the horse is a little lame, so that he can work. In these sorts of animals a slight blemish is not an essential defect; and there ought to be less hesitation in attempting to cure their fractures, when it is practicable, than those of high-bred horses; for, I repeat, they lose much less of their value. The following cases, added to those already published by skilful veterinarians, will prove that the cure of fractures is not so difficult as it has too long been thought to be, and that the expense of the treatment may be much less than has been imagined.

Case I.—Fracture of the coxal bone (the hip or haunch bone), at the ischium, near the cotyloid cavity (the acetabulum).

In 1818, a saddle mare of English breed, about eight years old, belonging to a stranger, fractured the right side of the coxal bone at the ischium near the cotyloid cavity. This fracture was got in hunting, when the animal leaped a wide ditch. The lameness which it occasioned was such, that the toe of the foot scarcely touched the ground, so long as the motion was a little rapid: when the motion was slow, the foot was placed straight down; but the limb was with great difficulty moved forward. On applying my right hand to the fractured part, which did not exhibit any heat, and seizing with my left hand the point of the thigh, I felt a movement of the ischium which easily enabled me to judge of the fracture, and its seat, and to discover that none of the fractured parts were displaced.

I ordered her to be kept quiet for three weeks, and then permitted them to leave her loose in the stable. At the end of two months she was mounted, and exercised at a foot-pace; and in another month she was fit to take the longest day's work without going lame: the following year she was sold into the stud of M. le Baron de Stael, at Coppet, where she produced some good foals.

Case II.—Fracture of the first phalange, the larger pastern bone.

These fractures are not uncommon; I have seen this bone fractured in four horses.

In two of these horses, the bone was fractured into several pieces, and the animals were destroyed, as they were of little value: the other two were cured.

The two first horses fractured this bone in frolicking on the best possible road.

Fractures of the pastern bone are discoverable by the want of support of the foot and the fractured limb : when the toe scarcely touches the ground, the foot is in the air. When the hoof is taken with one hand, and the other grasps the pastern, and with the hand which holds the hoof a semi-rotatory movement is performed, a crepitus will be heard, occasioned by the rubbing together of the two fractured surfaces.

On dissecting the horses which were destroyed on account of these fractures, I particularly examined the broken bone : in one the fracture was oblique, and it extended almost from one extremity to the other of the bone ; the superior piece also presented three vertical fissures.

The fracture in the other horse was transversal, very irregular at the superior part of the bone ; this part offered two splinters of the width of a man's nail, which proceeded from the superior extremity of the bone to its posterior and internal face.

Case III.—Fracture of the large pastern bone ; completely cured without suspending the horse.

The 8th of June, 1829, I was sent for by M. Rouget, innkeeper at Ouchy, near Lausanne, to look at a horse of his which had run down a declivity, when harnessed to a light cart. This was a carriage horse, of the Holstein breed, of a bay cherry colour, and about eight years old. It was placed in a box in the stable when I saw it, and appeared to be suffering, and was much agitated : the left posterior extremity was retracted, and the foot was up in the air. I felt the limb all over, and soon perceived that the pastern was painful when touched, but I could not discover any inflammation : I moved this part every way, but still could not detect the fracture ; I could only suspect it. Believing that it was not complete, I confined myself to bleeding the animal, and prescribing a strict regimen of diet for some days, and fomenting the pastern with Goulard's extract, to prevent swelling.

Three days afterwards I visited the horse again, and examined the diseased part, when I easily discovered the fracture of the pastern bone. I judged that this fracture was oblique, and by reason of that, it was not followed by so much inflammation. I had the whole of the inferior part of the limb fomented with arquebusade water, and wrapped a band of very strong linen many times round the pastern : I placed another under the fetlock joint to support the flexor tendons, and ordered them to bathe the fetlock several times a-day with the arquebusade water, and not to suffer the animal to lie down. He was not suspended. For about three weeks he kept his foot in the air ; at the end of that

time, he now and then tried to rest his toe on the litter. Six weeks after the accident he began to rest some weight on the foot, and a few days afterwards he was able to go to a pond about fifty paces from his stable, where he took a foot-bath every day, for about an hour at a time. At the expiration of the third month he was mounted, and was fit for regular service, at a walking pace; but it was observed that he still went lame when he was trotted, and it is probable that lameness continued for a long time.

Case IV.—Cure of the fracture of the pastern bone, without suspending the horse.

The 4th of August, 1829, I was sent for to see a bay cherry-coloured cart horse, belonging to M. Delamisinne, the Lausanne carrier. He told me that this horse being harnessed to a cart loaded with wood, the wheel guard was broken at a little declivity; and the horse running away, had broken the little drag chain, and the wheel had struck his right hind foot, and thus caused a fracture of the pastern bone.

I examined the horse, and found that the right hind extremity was in a state of flexion, the foot in the air, with an impossibility of bringing it to the ground. I felt the pastern; the slightest movement shewed me that a complete fracture of the large pastern had taken place, and I judged it to be transversal, and to be seated in the inferior part of this bone.

As the animal could not put his foot on the ground, I was obliged to think on some means of getting him to walk to the nearest stable we could find. It was necessary to favour the placing of the foot on the ground, if not so that the animal could rest on it, at least so that he might be able to limp on it a little. For that purpose I placed a strong bandage of linen in the pastern, and another underneath the fetlock, to form two supports for the extensor and flexor tendons in this region, and to prevent the movement of the fractured parts. In this manner the animal was got to the stable destined for him, where he was placed on a good litter, and tied to the rack by two straps; but he was not slung.

I placed three splents, enveloped in tow; one at the front, and the other two at the back of the fractured part. I fixed them on first by a layer of melted black pitch, which I put underneath the fetlock, and then by several rounds of strong bandaging. I left the band which I had placed below the fetlock, and ordered a light regimen for the first five days after the accident; and took away six pounds of blood.

The dressings stayed on for a month after the accident. At the expiration of that time the animal began to try to place his foot on the ground; I then loosened the bandages, without mov-

ing the splents. I bathed the fractured part well with lotions of the water of Labaraque, and then replaced the bandage as before; and ordered that it should be thus bathed every five or six days. At the end of six weeks he was able to rest on that leg in order to change his place: and in about seven weeks the dressings were taken off, and the horse was well enough to be led to his own stable, which was at a considerable distance, and where he was allowed to rest for three weeks, from a kind of excess of precaution. From that time to this the animal has done his daily work, drawing a heavy cart on the pavement of a town; and though he limps a little when he is trotted, he does as much slow work as ever he did.

Recueil de Med. Vet., Nov. 1831.

A Tumour enclosed in the Cranium.

By M. Leloir.

In 1814, a horse was struck by a ball, which caused a swelling on the superior part of the chest, six inches from the withers. The horse was brought to Alfort, and cured; but periodically, in the springs of the years 1815, 1816, 1817, there appeared a little below the scar on the chest a tumour, about the size of a man's fist (the cause of which could not be accounted for), and which broke, and required only cleanliness to heal it.

In April 1818, and in April 1819, instead of the appearance of these tumours, the horse exhibited symptoms of intense vertigo, which, at the first time, disappeared in eight days, after plentiful bleedings, purgatives, the head being bathed with cold water, and revulsives being applied to the chest and back. After the second attack the horse remained in the following state:—

The horse constantly held his head low, and inclined to the right side; his gait was irregular and staggering; his fore limbs were convulsed to such a degree, that progression was performed by leaps, or oftener by spasmodic bounds. He was completely blind, and rapidly lost condition; although he ate and drank voraciously. He remained in this state until the month of November, when all the symptoms except the blindness had materially diminished. On the 3d of January, 1820, the horse died suddenly, during a fresh attack of vertigo.

The post-mortem examination shewed the following lesions.

The dura mater and arachnoid membrane were very red on the superior and anterior portion of the brain. About two-thirds

of the way from the anterior termination of the septum medium (the corpus callosum) there existed a round tumour, embedded between the two lobes of the brain, about the size of a pullet's egg. Its parietes were thick, its nature fibrous; and it was filled with a homogeneous, viscid, and yellow fluid.

The anterior portion of this tumour adhered to the septum medium, and its superior part was attached to the parietal protuberance. It was attached to these parts by a dense hard tissue. The lateral ventricles were filled with an abundance of serosity; the plexus choroides were of a violet colour, and very much injected.

Journal Theorique et Pratique.

Veterinary Obituary.

The mourn'd—the lov'd—the lost!—CHILDE HAROLD.

Mr. JOHN FIELD.

THERE are no persons more painfully reminded of the truth of the old adage, that "time and tide wait for no man," than the editors of a periodical; and the moment had arrived when the printer was eagerly and angrily expecting the last page of our journal for June, ere we were enabled to collect sufficient materials to form an obituary worthy of him, a sketch of whose veterinary career we now purpose to give.

Mr. John Field was born on the 6th of September, 1768. His father and his grandfather were veterinary practitioners, and as good ones as those days could produce; and if there be truth, as truth there is, in hereditary predisposition, and much farther than we sometimes suspect, the love of veterinary practice formed, as it were, an inseparable part of his composition.

He remained in the country until he was nearly twenty-five years of age, and then, the Veterinary College having been recently established, he came to town, and entered it in July 1793, and became a resident pupil there.

He brought with him the advantage which a mere country school could afford, and that which was of far more importance, a determination to prepare himself for the arduous duties of his profession. He was the fellow-pupil of Bloxham, Clark, Lawrence, Mills, and Nash; and he distinguished himself by his close attention to practical anatomy. He was one of the best

veterinary anatomists of his day; and in after-life he turned this well to account in the numerous difficult and complicated operations which he performed.

His diligence and his proficiency were so evident, that ere he had been at the College nine months, he had attracted the attention of Mr. Morecroft, who had been allied with Mr. Coleman as joint Professor of the Veterinary College; and he quitted the College to become assistant to that gentleman, who then had an extensive establishment in Oxford Street; and ere the first twelve-month from his entrance at the College had expired, he appeared before the medical examiners (they were necessary then), and obtained his diploma.

His connexion with Mr. Morecroft brought him into contact with many of the higher classes of society; and in August 1794, he undertook a very difficult and complicated operation on a favourite animal belonging to their Majesties. He completely succeeded, and his reputation was, in a manner, established.

He continued as assistant to Mr. Morecroft six years, and became so useful to him, and so identified with his connexion and practice, that that gentleman felt it to be his interest to receive Mr. Field into partnership with him.

That partnership existed during eight years with uninterrupted harmony; and, in fact, the qualities of the partners were so balanced and so opposed, that, with well constituted minds like theirs, good only could be the result. The scholastic education, and the tendency, yet a well-regulated one, to theoretical speculation in one, was well balanced by the sterling anatomical knowledge and the straightforward practical course of the other; and they were friends as well as partners, and, in a manner, monopolized the greater part of the business of the west end of the metropolis.

In 1805, Mr. Field was appointed to the 2d Life Guards, and he held that situation for eight-and-twenty years, and until he died; and in proof of the estimation in which he was held by the officers of his regiment, a request was forwarded to his family, that two of them might be permitted to attend his funeral, and Lieutenant Colonel Reed and Captain Williams followed as mourners.

In 1808, even superior prospects opened to Mr. Morecroft in a distant clime; and the partnership, but not the friendship, between these two excellent veterinarians was dissolved.

Soon afterwards Mr. Field was appointed superintendent of the stud to the East India Company; and in the early part of July, in the same year, he received a warrant as farrier to the King, on the death of Mr. Spencer, and which situation he held

until the Prince of Wales was appointed Regent, when many changes taking place in the royal establishment, he retired.

He then confined himself to the duties of his profession, as veterinary surgeon to the 2d Life Guards, and as a private practitioner in the metropolis; and such was his diligence, his devotedness to his profession, and his recklessness of labour and fatigue, that he was enabled to combine, satisfactorily to his commanding officer and the public, the seemingly incompatible duties of both situations. He died on the 19th of April in the present year, in the sixty-fifth year of his age.

We had not any very intimate personal acquaintance with Mr. Field. Indeed, it was the observation, and a little too well founded, that he held himself, in a manner, aloof from his veterinary brethren; but there was no pride or affectation in this: they were the natural retired habits of the man; and they who knew him best could vouch, that he had a warm heart and generous spirit.

The same explanation may be given of the apparent mystery in which a portion of his professional conduct was sometimes shrouded. There were few men actuated by such undeviating rectitude of conduct, and independence of spirit, as Mr. Field. He was in the habit of promptly making up his opinion on the various cases that came before him, and then his practice was straightforward and to the point; and, conscious of this, he was less anxious to consult the opinion, or conciliate the good-will of others. His habits, even in his own family, were retired; and therefore it is not to be wondered if, to his professional brethren, too often actuated by jealousy or ill-will, he appeared to be uncommunicative and reserved.

The veterinary profession is much indebted to Mr. Field. They owe to him the greater part of their knowledge of the diseases of the liver generally, and particularly of that slow bleeding from its peritoneal coat which destroys so many horses. The knowledge of the distinction between pleurisy and pneumonia we owe entirely to Mr. Field; and there are few facts so important to the practitioner. While every disease of the chest was confounded with and called inflammation of the lungs, and the existence of pure inflammation of their pleuritic covering was stoutly denied, Mr. Field gave us a graphic description of this disease, which could not be mistaken; and while he proved beyond denial the difference in the symptoms of the two diseases, he led us to the best mode of treatment of both.

Of the navicular disease, Mr. Field appears to have had a correct knowledge many a year before it was recognized, or even mentioned, among veterinarians. Mr. Morecroft, in a paper pub-

lished in the Calcutta Journal, in 1819, speaks of "lamenesses in which the flexor tendon was now and then observed to have been broken, either partially or entirely, but more commonly to have been bruised and inflamed in its course under the navicular or shuttle-bone, or at its insertion into the bone of the foot." He says, that sometimes "the navicular bone itself has been found to have been fractured; at others, its surface has been seen deprived of its usual coating, and studded with projections or riders of new growth, or exhibiting superficial lesions more or less extensive." This, although Messrs. Morecroft and Field called it by a wrong and somewhat incorrect name, "the coffin-joint lameness," was, in fact, the navicular-joint lameness of Mr. Turner: but although Mr. Field was aware of this frequent disease, we owe to Mr. Turner the first public demonstration and proof of it.

Mr. Field's straightforward method of practice, although it occasionally made him enemies, abundantly increased the already extensive business of Mr. Morecroft. It likewise founded and established, to an extent to which no practitioner had before enjoyed it, that portion of a veterinary surgeon's duty which consists in the examination of horses for purchase or sale. Here Mr. Field's practice had no parallel in his day, or at any former time.

It has been said that he was in the habit of leaning more to the buyer than the seller; that he was not content with deciding on the mere abstract soundness of the horse; but that he often gave an opinion of the general character and capability of the animal. It may be so, and we confess that we are not very much inclined to blame him for this; for he was, and all practitioners are, feed by the purchaser. The discrimination and tact of the surgeon are temporarily bought as a defence against the horse-knowledge, and sometimes the imposition, of the seller. The purchaser is usually as incapable of appreciating the general qualities of the horse, and his fitness for a certain purpose, as he is of deciding on his soundness or unsoundness; and we are much mistaken if his application to the veterinarian does not, in his mind, embrace the general character of the horse as well as his abstract soundness. If Mr. Field has been supposed, and perhaps truly, to have leaned a *little too much* to the side of the purchaser, the time at which he commenced his practice should be taken into the account. Every kind of imposition was then attempted to be practised on the purchaser; and tricks which few horse-dealers would now disgrace themselves by adopting, were in common use in every yard. Mr. Field observed this, and was indignant at it; hence arose his leaning towards the purchaser; and to no man are we so much indebted for the discontinuance of many an infamous fraud. The public, however,

approved of his system, and it is one which will maintain its ground, although every horse-dealer in the metropolis were to combine to put it down. That it was a practice which he adopted on principle, was rendered sufficiently evident when, and with the certainty of giving grievous offence, he scrupled not to point out the faults of the horses of his best friends, when they were brought to him for examination. His employer was his client for the time; and it has not yet been proved that he was not bound to devote himself to the interest of his client. His extensive practice, the esteem in which he was held by the officers of his regiment, and by all who employed him, and the fortune which he left behind him, are the best proofs of his professional worth.

Y.

Miscellanea.

Margaret Verch Evans.

Of all the females modern Wales has produced, of a surety Margaret Verch Evans, who flourished about eight and twenty years ago, near Llanberis, in Caernarvonshire, was the most extraordinary. In point of accomplishments and their practical utility, few, if any, of the fair sex have excelled this celebrated Cambrian damsel. Passionately fond of the joys of the chase, in her cottage was to be found, at all times, a selection of the best thorough-bred dogs in the principality, and her selection was not limited to one species. Greyhounds, beagles, foxhounds, terriers, and even curs of low degree, were to be seen frisking about Margaret's cottage; and the gossips of Llanberis affirm, even to this day, that she made a more desperate havoc among the hares and foxes than all the confederate hunts did together. Nor were Margaret's qualifications confined to her dexterity and hardihood as a huntress. She managed a boat with admirable facility; she could play on the harp, and on the fiddle; she made shoes; built and repaired boats; shod horses; and, at the age of seventy, was the best wrestler in the county. What will our fair countrywomen say to this? This amazon died about eight and twenty years ago, at the advanced age of ninety-two, a wonderful example of native ingenuity, persevering industry, and contented penury.—*Carnarvon Herald.*

A serious accident happened on Thursday to Mr. Adamson, of the city of Durham, veterinary surgeon. He was in the act of preparing some medicine for a horse, and had put a quantity

of nitric acid and oil of tartar in a quart bottle, which he was shaking for the purpose of mixing those ingredients, when, from the accumulation of gas, the bottle exploded with the report of a small cannon, and severely wounded Mr. Adamson in the side. A large piece of glass was afterwards extracted, which, it is feared, has injured the lungs. Two horses, belonging to the Hon. and Rev. Dr. Wellesley, were leaving the shop at the time of the accident, in charge of a servant. One of them received a deep wound in the thigh from the broken glass, and the servant was thrown against the wall by the force of the explosion. Mr. Adamson is expected to recover.—*Tyne Mercury.*

The Horse-Dealer.

[*From Hood's Comic Annual.*]

The horse-dealer is a double dealer, for he dealeth more in double meanings than your punster. When he giveth his word, it signifieth little, howbeit it standeth for two significations. He putteth his promises, like his colts, in a break. Over his mouth, truth, like the turnpike-man, writeth up No Trust. Whenever he speaketh, his speech hath more turns than the fore-wheel. He telleth lies, not white only, or black, but likewise grey, bay, chesnut-brown, cream, and roan—pyebald and skewbald. He sweareth as many oaths out of court as any man, and more in; for he will swear two ways about a horse's dam. If, by God's grace, he be something honest, it is only a dapple, for he can be fair and unfair at once. He hath much imagination, for he selleth a complete set of capital harness, of which there be no traces. He advertizeth a coach, warranted on its first wheels; and truly the hind pair are wanting to the bargain. A carriage that hath travelled twenty summers and winters, he describeth well-seasoned. He knocketh down machine-horses that have been knocked up on the road, but is so tender of heart to his animals, that he parteth with none for a fault; 'for,' as he sayeth, 'blindness or lameness be misfortunes.' A nag, proper only for dog's meat, he writeth down, but crieth up, 'fit to go to any hounds;' or, as may be, 'would suit a timid gentleman.' Stringhalt he calleth 'grand action,' and kicking, 'lifting the feet well up.' If a mare have the farcical disease, he nameth her 'out of comedy,' and selleth Blackbird for a racer because he hath a running thrush. Horses that drink only water, he justly warranteth to be 'temperate;' and if dead lame, declareth them 'good in all their paces,' seeing that they can go but one. Roaring he calleth 'sound,' and a steed that high bloweth in running, he compareth to Eclipse, for he outstrippeth the wind. Another might

be entered at a steeple-chase, for why? he is as fast as a church. Thoroughpin with him is synonymous with 'perfect leg.' If a nag cougheth, 'tis 'a clever hack.' If his knees be fractured, he is 'well broke for gig or saddle.' If he reareth, he 'is above sixteen hands high.' If he hath drawn a tierce in a cart, he is a good fencer. If he biteth, he shews good courage; and he is playful merely, though he should play the devil. If he runneth away, he calleth him 'off the Gretna Road, and has been used to carry a lady.' If a cob stumbleth, he considereth him a true goer, and addeth 'the proprietor parteth from him to go abroad.' Thus, without much profession of religion, yet is he truly Christian-like in practice, for he dealeth not in detraction, and would not disparage the character even of a brute. Like unto love, he is blind unto all blemishes, and seeth only a virtue, meanwhile he gazeth at a vice. He taketh the kick of a nag's hoof like a love token, saying only, before standers by, 'poor fellow,—he knoweth me!'—and is content rather to pass as a bad rider, than that the horse should be held restive or over-mettlesome, which discharges him from its back. If it hath bitten him beside, and moreover bruised his limb against a coach-wheel, then, constantly returning good for evil, he giveth it but the better character, and recommendeth it before all the studs in his stable. In short, the worse a horse may be, the more he chaunteth his praise; like a crow that croweth over Old Ball, whose lot it is on a common to meet with the common lot.

Farriers' Anvils.

A blacksmith of Milan, named Pontisick, has, to the great comfort of his neighbours, especially the rich, successfully practised a very simple contrivance to diminish, in a remarkable degree, the loud noise caused by the percussion of the hammer on the anvil. It is merely to suspend a piece of iron chain to one of the horns of the anvil, which carries off a great portion of the acute sound usually produced. Sig. Godenzio Vicini, of Asso, in the province of Como, has, however, introduced an improvement on this contrivance, by the addition of a spring fixed in the basis of the anvil, which, keeping the chain stretched, diminishes the sound in a much greater degree; and it is equally easy to remove the ring of the chain from the horn of the anvil, if needful, by a mere blow of the hammer. — *Literary Gazette.*

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XXXI.

Chest Affections in the Horse.

I HAVE hinted at the disadvantage under which the veterinary surgeon labours in his treatment of the diseases of the chest, and particularly in the horse. He must not only subdue the malady, but he must remove all its consequences. *He must leave his patient perfectly sound,* or he has done comparatively nothing. This is a task always difficult, and sometimes impossible to be accomplished. The two most frequent consequences of severe chest affections in the horse are recognized under the terms *thick wind* and *broken wind.* The breathing is hurried in both, and the horse is generally much distressed when put upon his speed; but it is simply quick breathing in the first, with a peculiar sound like *half roaring;* the inspirations and expirations are rapid, forcible, but equal: in the second the breathing is also hurried, but the inspiration does not differ materially from the natural one, while the expiration is difficult, doubly laborious. The changes of structure which accompany these states of morbid respiration, are as opposite as can be imagined. Induration of the substance of the lungs, diminution of the number or the calibre of the air-passages, are the causes of *thick-wind.* If the portion of lung employed is lessened, or the bronchial tubes will not admit so much air, the quick succession of efforts must make up for the diminished effect produced by each. In *broken wind* there is rupture of the air-cells, there is an unnatural inter-communication between the air-cells in the same lobule, or between those of the neighbouring lobuli. It is no longer, if we may dare so to consider it, a rounded cell with one opening into it, through which the air will easily pass during the expansion or contraction of the cell; but the membrane between the cells being ruptured, a kind of labyrinth is formed, in which the air becomes entangled, and from which it is impossi-

ble to force it by a single effort, or even perfectly by the double effort that characterizes *broken wind.* The structure of the lung, and the discharge of function, and the treatment, too, being so different, these diseases require separate consideration.

Thick Wind.

Hepatization.—When speaking of pneumonia I observed, that not only are the vessels which ramify over the delicate membrane of the air-cells gorged with blood, but they are sometimes ruptured, and the cells are filled with blood. The black, softened, pulpy appearance of the lung thus produced, is the *rottenness* of the groom and farrier, proving equally the intensity of the inflammation, and that it is of recent date. If the horse is not speedily destroyed by this lesion of the substance of the lungs, the serous portion of the effused blood is absorbed, and the solid becomes organized. The cells are obliterated, and the lung is *hepatized,* or its structure bears considerable resemblance to the parenchyma of the liver. This may occur in patches, or it may involve a considerable portion of the lung.

Effect of this on Respiration.—Now the horse has no lung to spare in the performance even of the ordinary service we require from him, much less under the cruel tasks which we sometimes impose upon him. If, therefore, a portion of the lung is thus rendered impervious, the remainder will have additional work to perform. The same quantity of blood must be supplied; and if the working part of the machine is diminished, it must move with greater velocity as well as force,—the respiration must be quicker and more laborious. This quick and laboured breathing can be detected even when the animal is at rest, and it is indicated plainly enough by his sad distress when he is urged to unusual or continued speed. The inspirations as well as the expirations are shorter, as well as more violent; the air must be more rapidly admitted and more thoroughly pressed out; and this is accompanied by a peculiar sound. I have called it a half-roaring, that can rarely be mistaken.

Vomicæ.—The healthy structure of the lung is rarely or never restored when the air-cells have been once filled with, and obliterated by, this organized deposit. The hepatization, however, does not always remain, for the organization is not complete; it does not perfectly resist various and perhaps slight causes of decomposition, and a softening process usually commences. This deposit, or some portion of it, begins to dissolve. I know not how we are to ascertain the commencement of this change, or to take advantage of it if we could discover it: the membrane has

been compressed, destroyed ; the minute ramifications of the pulmonary arteries have been compressed, destroyed ; and one uniform mass has resulted, which is now taken up by the absorbents, and instead of the restoration of the primary air-cells, with their mesh-work of innumerable vessels, we have larger or smaller cavities—ulcerations—vomicæ. There are few cases of old hepatization in which there are not some parts in a state of softening ; and the cases are numerous in which the vomicæ have been very extensive, while nothing has indicated their existence. Indeed, when we consider that they happen in a part already removed from the function of respiration, and furnished with organic nerves alone, or with few sensitive fibrils, we need not wonder that this secondary change should proceed so far, and we remain perfectly unconscious of it.

Advantage of Auscultation.—This brings me back to a circumstance on which I have already laid much stress—the habitual and anxious recourse to auscultation in every inflammatory affection of the chest. We may guess at the commencement of that congestion which precedes hepatization, by the laborious heaving of the flanks ; but by auscultation alone can we *ascertain* its commencement and progress. The increase of the crepitus will tell us that the mischief is beginning, and the cessation of the murmur will clearly mark out the extent of the congestion.

The inflammatory stage of the disease having passed, and comparative health being restored, and some return to usefulness having been established,—the horse being now *thick winded,* auscultation will be far more valuable than is generally imagined. It will faithfully indicate the extent of the hepatization, and so give a clue to the degree of usefulness, or the degree to which we may tax the respiratory system ; and it will also serve to distinguish, and that very clearly, between this cause of *thick wind,* and the morbid changes that may have resulted from bronchitis, or the thickening of the parietes of the air-passages, and not the obliteration of the air-cells. This leads me to the consideration of a second cause of thick wind.

Thickening of the Lining Membrane of the Bronchiæ.—I have described bronchitis as inflammation of the lining membrane of the bronchial tubes. I need not tell you that one of the tests of inflammation is tumefaction, increased deposition in the substance of the part inflamed. This is peculiarly exemplified in bronchitis ; the thickening and the sensibility of the membrane produce in that disease a disturbance in respiration unknown in any other malady, and almost incredible. It will often be found that this unnatural deposition, this thickening of membranes, will not always subside with the subsidence of the inflammation.

If that has been intense, and especially if it has not been promptly attacked, the engorgement will long remain materially interfering with the function of the part. The Professor of the Veterinary College, and my valued friend Mr. Percivall, are apparently at issue here; the former attributing thick wind to effusion into the air-cells, and the latter to a thickening of the membrane lining these cells or the passages to them. The truth of the matter is, that they are both right. The effusion and the thickening, and particularly the latter, are causes of thick wind. The previous disease, when it can be ascertained, will determine to which of the morbid changes of structure the impeded function of respiration is to be attributed.

Auscultation.—If we know nothing of the previous disease, auscultation will generally determine the matter for us. There will be no deficiency of murmur,—stilness,—at any point, but an increased sound everywhere—a whizzing—a kind of roaring. In some instances, both causes seem to have combined. While there has been thickening of the bronchial membrane, there has been deposit in the air-cells. So far then as *thick wind* is connected with previous disease, it is plainly referrible to one of these causes, hepatization of the substance of the lungs, and obliteration of the air-cells, or thickening of the lining membrane, and diminished calibre of the passages leading to these cells. Whether the cells are fewer, or the passages are contracted, only a less quantity of air can be admitted to arterialize the blood at each inflation of the chest, and then the act of respiration must be oftener, and consequently more forcibly performed, and that in proportion to the hepatization or engorgement.

Treatment.—Of this, gentlemen, I have little to say. I know not by what means I can excite the absorbents to take up the solid organized mass of hepatization, or to restore the membrane of the cells and the minute vessels ramifying over them, now confounded and lost. I have a somewhat better chance, and yet not much, in removing the thickening of the membrane;—counter-irritants, extensively and perseveringly applied to the external parietes of the chest, might do a little. If thick wind immediately followed bronchitis, it would certainly be justifiable practice to blister the brisket and sides, and that repeatedly; and to administer purgatives if we dared, or diuretics, more effectual than the purgatives, and always safe.

Food.—Our attention must be principally confined to diet and management. A thick-winded horse should have his full proportion, or rather more than his proportion of corn, and a diminished quantity of less nutritious food, that the stomach may never be overloaded, and press upon the diaphragm, and so upon

the lungs, and increase the labour of these already over-worked organs. Particular care should be taken that the horse is not worked immediately after a full meal; the overcoming of the pressure and weight of the stomach will be a serious addition to the extra work which the lungs already have to perform from their altered structure.

Exercise.—Something may be done, and more than has been generally supposed, in the palliation of thick wind, by means of exercise. If the thick-winded horse is put, as it were, into a regular system of training; if he is daily exercised to the fair extent of his power, and without seriously distressing him, his breathing will become freer and deeper, and his wind will materially improve. We shall call to our aid here one of the most powerful excitants of the absorbent system—pressure; the pressure of the air upon the tube; the pressure of the working part of the lung upon the disorganized; and adjusting this, so as not to excite irritation or inflammation, we may sometimes do wonders. You know, gentlemen, that this is the very secret of training, and that the power and the durability of the hunter and the racer depend entirely upon this. I may almost say, that every untrained horse is, to a certain degree, a thick-winded one: there is either a deposition of adipose, or other matter, or there is an indisposition in the parts to accommodate themselves to unusual exertion, and which gradually yields to the habit of exertion pushed to the point which the animal can bear without distress. A thick-winded horse may be seriously injured by being pushed beyond his power; the over-laboured cells or passages may burst from the violent influx of the air, or its forcible expulsion, and thick wind may degenerate into broken wind; but, on the other hand, the horse is sure to suffer from idleness; for the deposition or thickening will become more confirmed, and the parts will acquire an additional, and, perhaps, an habitual inaptitude for exertion.

Thick wind depends on Conformation.—Thick wind, however, is not always the consequence of disease. There are certain cloddy, round-chested horses, that are naturally thick-winded, at least to this extent,—they are capable of that slow exertion for which nature designed them, but they are immediately distressed and blown if put ever so little out of their usual pace. A circular chest, whether the horse is large or small, indicates thick wind. The circular chest is a capacious one, and the lungs which fill it are large, and they supply sufficient arterialized blood to produce plenty of flesh and fat, and these horses are always fat. This is the *point of proof* to which we look, when all that we want from the animal is flesh and fat; but the expanding form of the

chest is that which we want in the animal of speed—the deep as well as the broad chest—always capacious for the purpose of muscular strength, and becoming considerably more so when arterialized blood is more rapidly expended in quick progression. We cannot enlarge the capacity of a circle; and if more blood is to be furnished, that which cannot be done by increase of surface must be accomplished by frequency of action. Therefore it is that all our heavy draught-horses are thick-winded. It is no detriment to them, for their work is slow; or rather it is an advantage to them, for the circular chest, always at its greatest capacity, enables them to acquire that weight which it is so advantageous for them to throw into the collar.

Broken Wind.

Peculiar Breathing.—This is immediately recognizable by the manner of breathing. The inspiration is performed in somewhat less than the natural time, and with an increased degree of labour: but the expiration has a peculiar difficulty accompanying it: it is accomplished by a double effort, in the first of which, as Mr. Blaine has well explained it, "the usual muscles operate; and in the other the auxiliary muscles, particularly the abdominal, are put on the stretch to complete the expulsion more perfectly, and, that being done, the flank falls, or the abdominal muscles relax with a kind of jerk or spasm."

An aggravated Degree of Thick Wind.—This may proceed from unusually extensive induration or hepatization of the lungs, or thickening of the bronchial membrane, rendering it a work of labour to accomplish the expulsion of the air, and requiring another set of muscles to be gradually associated in the act.

Different Theories of Broken Wind.—The most frequent cause or accompaniment of this breathing is an emphysematous state of the lungs. This, although not precisely a doctrine of modern date in veterinary pathology, has only lately been generally received. Some of the Greek Hippiatrists maintained that it proceeded from ulceration of the lungs, which had been obstructed and filled with dust; and others of them, that it was to be attributed to rupture of the lungs, from the concussion they experienced in violent cough. Vegetius attributed it to the dryness of the lung, and the diminution of its volume. The Spanish veterinarians believed that it arose from the bad quality of the blood, and the afflux of humours to the lungs; and also a morbid contraction of the bronchial tubes. The Italians seemed to refer it to ulceration and rupture of the lungs. M. Demoussy traced it to diminution of the calibre, both of the air-cells and the bronchial tubes, from an aneurismatic varicose state of the vessels of

the lungs. Vitet attributed it to the introduction of air and of blood into the tissue of the lungs; and Bourgelat, to obstruction of the vessels of the chest, and a vitiated state of the lungs.

Among ourselves, old Bracken artfully entrenched himself, by saying, that "broken wind in horses is what, in human creatures, we call asthmatic and phthisicky." Blunt traced it to the relaxation, and thinness, and feebleness of the diaphragm, with an enlarged state of the lungs and heart. Bartlet and Gibson likewise attributed it to hypertrophy of the heart. One of Gibson's disciples, Mr. Knowlson, fifty-seven years in full business, enters so thoroughly into the opinion of his predecessor, that I cannot refrain from quoting his version*. "It is frequently owing to the hasty or injudicious feeding of young horses for sale, by which means the growth of the lungs, and all the contents of the chest, are so much enlarged, that, in a few years, the cavity of the chest is not sufficient to contain them, when they expand themselves to perform their proper function. Horses rising eight years are most subject to it; for, at six, the horse generally finishes his growth in height, and after that he lets down his belly and spreads, and all his parts gain their full size; so that the pressure upon the lungs and midriff is now increased. Dissections of horses that have died broken-winded sufficiently prove the truth of the above observations; and in some of them the disproportion of them has been so great, that the heart and lungs have been almost twice their natural size." Horses are very differently constructed now; for we do not find this strange disproportionate bulk of the thoracic viscera; but we *do* find that which these excellent morbid anatomists mistook for hypertrophy, an emphysematous state of the lungs, not admitting of that degree of collapse which the pressure of the atmospheric air would otherwise have occasioned. I once saw a case in which the lungs did not collapse at all on the opening of the chest. The horse had had broken wind to a most annoying degree.

Origin of the present prevailing Opinion.—The majority of veterinary surgeons attribute broken wind to an emphysematous state of the lungs. In the year 1795, Mr. Coleman was dissecting a mare that had been destroyed on account of inveterate broken wind. Mr. Bracy Clark was standing by, with the pupils of the Veterinary College. The lungs were free from inflammation, and white; and it was considered, at first, that they were not the seat of the disorder; until some one observed a small bladder or vesicle on the outside of the lungs, in the external investing pleuritic coat. It was at first mistaken for a

* Knowlson's Complete Farrier and Horse Doctor, p. 46.

tubercle, but Mr. Clark, suspecting from its appearance that it was not solid, punctured it, and it immediately subsided; and it instantly suggested itself to his mind, that the lungs were in a state of emphysema, or that air was contained in a state of extravasation in their substance. Hence Mr. Clark claims the honour of being the father of the modern theory of broken wind, and which is now adopted by the English and the French schools. I do not know, however, why Mr. Coleman should not participate in the honour, since he is acknowledged to have suggested at the time, that the extravasation of the air into the substance of the lungs was occasioned by a rupture of the air-cells.

Description of the emphysematous State of the Lungs.—In almost every broken-winded horse whose carcass I have examined, I have found these vesicles or vessels (for some of them have been of considerable magnitude) on the surface of the lung beneath the pleura; and in every case I have been enabled to trace them, or a portion of them, into the substance of the lungs, and communicating with the air-cells beneath. I have also succeeded, by gentle and continued pressure, in returning a portion of the air again into the lungs, but never in diffusing it among the cellular membrane, between the pleura and the lung. I was satisfied, therefore, that it was no *extravasation* of air; that it was no gas extricated by any process of decomposition: it was simply dilatation of an air-cell, or of some of the air-cells, either appertaining to one lobule, or a few contiguous ones. *It was not extravasation into the parenchymatous substance of the lung,* for there was no general pulmonary emphysema. It did not resemble emphysema in any other part of the frame; it was nothing like that inflation of the cellular membrane, more or less extensive, which almost invariably accompanies a puncture into the thorax, wounding the lung, and evidently admitting the air into its parenchymatous substance.

Progress of the Emphysema and Rupture of the Cells.—I have been brought to regard this as the commencement of the morbid change in the air-cells, and taking place at different periods in different parts of the lungs; for I have invariably found some other portions, and more particularly towards the edges of the lobes, where the cells have not been so much dilated, but where they evidently ran into one another. I could there press the air along; no, not all over the lobe, but for a little space: sometimes, indeed, for the space of an inch or two, but oftener not beyond one of the lobules into which the lungs are evidently divided; and while I did this, there was a crepitating crackling noise, as if I was breaking down the attenuated membrane of other cells. Here we have the true broken cell, whence

this disease derived its name. This portion of the lung was considerably lighter than the neighbouring ones; and when I cut into it (what I have never been able otherwise to do, although some anatomists speak of it), I have had a distinct view of the separate air-cells, and the termination of the air-tubes, now dilated. If you wish to have proof of this, inflate the lungs of a horse that has had bad broken wind, and hang them up where there is a thorough draught, so that they may be dried as speedily as possible. Incisions being then made into them, will shew the actual state of the cells. I can conceive that broken wind may proceed from hepatization of the lung, or thickening of the bronchial membrane; but I have never seen it without this emphysematous state of the lungs, although sometimes existing in so slight a degree, that it would have eluded the eye, and was recognizable only by the crackling, when the edges of the lobe were pressed.

Cause.—Broken wind is preceded or accompanied by cough; a cough perfectly characteristic, and by which the horseman would detect the existence of the disease in the dark. The cough of thick wind, which I should have noticed before, is a peculiar one; it is short, hollow, yet feeble: the cough of the broken-winded horse is still shorter, cut short, grunting, yet generally followed by a wheeze; and when the animal is suddenly struck or threatened, there is a low grunt, of the same nature, but not so loud as that of roaring. Broken wind is usually preceded by cough; that cough becomes chronic, leads on to thick wind, and then there is but a step to broken wind. It is the consequence of the cough which accompanies catarrh and bronchitis oftener than that of or following pneumonia; and of inflammation and probably thickening of the membrane of the bronchiæ, rather than of congestion of the air-cells.

The frequent consequence of Bronchitis.—Laennec, whose illustrations of the diseases of the chest are invaluable to the human surgeon, comes to our assistance; and, while describing emphysema of the lungs of the human being, gives us an explication of broken wind, more satisfactory than I have found in any of our veterinary writers. I will endeavour to condense his description. He attributes what he calls dry catarrh "to the partial obstruction of the smaller bronchial tubes, by the swelling of their inner membrane. The muscles of inspiration are numerous and powerful, while expiration is chiefly left to the elasticity of the parts: then it may happen that the air which, during inspiration, had overcome the resistance opposed to its entrance by the tumid state of the membrane, is unable to force its way through the same obstacle during expiration, and remains

imprisoned in the cells, as it were, by a valve. The succeeding inspirations introduce a fresh supply of air, and gradually dilate the cells to a greater or less extent; and if the obstruction is of some continuance the dilated condition of the cells becomes permanent."

Progress of the Disease.—Then we can easily imagine that they cannot bear any sudden or violent inspiration, or that the continuance of sudden and violent inspirations, and the forcible pressure of more air, will rupture the cells; or that a sudden effort of expiration, as in violent cough, fruitlessly pressing the confined air against the almost obstructed passage, may produce the same effect. A second cell is now involved, and gradually shares in the distention of the first, and becomes ruptured; and the greater part or the whole of the lobule is gradually broken down, and a labyrinth of cells is formed, through which the air can no longer be pressed by the weak mechanism of usual expiration, and scarcely by the aid of the auxiliary muscles of the abdomen causing the second effort.

Peculiarity of Feeding.

Farther Explication of the Disease.—We are now, perhaps, enabled to account for several circumstances attending the disease. The preceding cough, and that of long continuance, is the foundation of the disease, or indicates that irritable state of the bronchial membrane with which chronic tumefaction is almost necessarily associated. Horses that are greedy feeders, that devour large quantities of not highly nutritious food, or that are worked with a stomach distended by this food, are very subject to broken wind. There is the pressure of the distended stomach on the diaphragm impeding the motion of the lungs, increasing the stress upon every part, and lacerating the thinned membranes of the distended cells; for the very distention of the cell renders the membrane thin, and more easily lacerable. More depends upon the management of the food and exercise than some have been aware of. The post-horse, the coach-horse, and the racer, are comparatively seldom broken-winded; they are fed, at stated hours, on nutritious food, that lies in little compass; and these hours of feeding and of exertion are so arranged that they seldom work on a full stomach. The agricultural horse is too often fed on the very refuse of the farm, and his hours of feeding, and his hours of work, are frequently irregular; and the carriage-horse, although fed on more nutritious food, is often summoned to work, by his capricious master, the moment his meal is devoured.

A rapid gallop on a full stomach has often produced broken wind. When the exertion has been rapid and long, I can easily conceive a rupture of the air-cells of the soundest lungs; but I am inclined to believe, that, were the history of these cases known, there would be found to have been a gradual preparation for this result; there would have been chronic cough, or more than usually disturbed respiration after exertion, and then it required little more to perfect the mischief. Galloping after drinking has been censured as a cause of broken wind, yet I cannot think that it is half so dangerous as galloping with a stomach distended by solid food. Old Dr. Grey relates a curious story of a horse having been cured of broken wind by a brushing gallop after watering. He says that "a certain groom, who had a horse under his care, kept him from drinking for two or three days, giving him all that time as much hay and other provender as he would eat; then he leaped upon his back and rode him to water, where he suffered him to drink his fill: then he clapped spurs to him, and galloped full speed till the poor creature fell down for want of breath, and lay some time as if he was dead. As soon as he recovered wind, the groom gave him more water, and galloped him a second time until he fell, and so a third. Well; when the horse had recovered his wind a little, he fell to coughing very much, and, by the violence of the shake, cast out of his windpipe and mouth a lump of congealed phlegmatic stuff of a good bigness, after which the gelding was freed from the distemper." The author says he heard this from a worthy honest farmer, who had it from the very groom that performed. We, I think, should require better evidence to induce us to believe this story, and many an instance of the success of this treatment to persuade us to adopt it.

Foul Feeding.—It is said that broken-winded horses are foul feeders, because they devour almost every thing that comes in their way, and thus impede the play of the lungs; but there is so much sympathy between the respiratory and digestive systems, that one cannot be much deranged without the other evidently suffering. Flatulence, and a depraved appetite, may be the consequence as well as the cause of broken wind; and there is no pathological fact of more frequent occurrence than the co-existence of indigestion and flatulence with broken wind. Flatulence seems so invariable a concomitant of broken wind, that the old farriers used to think, that by some inexplicable way the air found its way from the lungs to the abdomen; and thence their "holes to let out broken wind." They used literally to bore a hole near to or above the fundament to give vent to the imprisoned wind. The sphincter muscle was generally divided;

and although the trumping ceased, there was such a constant, although silent, emission of fœtid gas, that the remedy was worse than the disease.

The narrow-chested horse is more subject to broken wind than the broader and deeper chested one, for there is not so much room for the lungs to expand when rapid progression requires the full discharge of their function.

Hereditary.—Is broken wind hereditary? I believe so. I am sure that I have seen cases of it. It may be referred to hereditary conformation—to a narrower chest, and more fragile membrane—and predisposition to take on those inflammatory diseases which end in broken wind; and the circular chest, which cannot enlarge its capacity when exertion requires it, must render both thick and broken wind of more probable occurrence.

Treatment.—Is there any cure for broken wind? What medical skill can repair the broken down structure of the lungs? Sir John Floyer thought he could cure the *broken wind* "by a paracentesis in the thorax, for if the external air be admitted, it will compress the flatulent tumour; and, through the same hole a styptic and carminative hydromel may be injected, to restore by its stypticity the tone of the membranes, and discuss by its aromatic acrimony the windy spirits or air retained in the lungs." Of about the same value is the recommendation of Mr. Parkinson to feed with hay and corn wetted with chamber-lye; and to pour shot down the throat, "which will drive the bowels so far from the midriff, that the disease will not be discernible." Linseed oil given in large quantities has been extolled as a cure. It may act as a purgative, and so empty the stomach and bowels, and give temporary relief. Mr. Knowlson says, that "two or three cloves of garlic being given in each feed, or three ounces bruised and boiled in a quart of milk and water, and given every morning for a fortnight, have been found very serviceable. So easy a remedy should never be neglected; *for by warming and stimulating the solids, and at the same time dissolving the tenacious juices which choke up the vessels of the lungs, it greatly relieves this complaint.*" Enough of this foolery!.

Food.—If we cannot cure, we may in some degree palliate broken wind; and first of all, we must attend carefully to the feeding. The food should lie in little compass,—plenty of oats and little hay—no chaff. Chaff is particularly objectionable, from the rapidity with which it is devoured, and the stomach distended. Water should be given in moderate quantities, and the horse should not be suffered to drink as much as he likes until the day's work is over. Green meat will always be serviceable. Carrots are particularly useful. They are readily di-

gested, and appear to have a peculiarly beneficial effect on the respiratory system.

It is from the want of proper attention to the feeding that many horses become broken winded, even in the straw-yard. There is little nutriment in the provender which they there find; and to obtain enough for the support of life, they are compelled to keep the stomach constantly full, and pressing upon the lungs. It has been the same when they have been turned out in coarse and innutritive pasturage. Here the stomach was perpetually gorged, and the habitual pressure on the lungs cramped and confined their action, and inevitably ruptured the cells when the horse gambolled with his companions, or was wantonly driven about.

Exercise.—Next in importance stands exercise. The pursive or broken-winded horse should never stand idle in the stable a single day. It is almost incredible how much may be done by attention to food and exercise. There is scarcely a hunt in which there is not a thick or broken-winded horse, that, by judicious feeding and training, is enabled to acquit himself very respectably in the field. The broken-winded horse may thus be rendered comfortable to himself, and no great nuisance to his owner;—but inattention to feeding, or one hard journey—the animal unprepared, and the stomach full,—may bring on inflammation, congestion, and death. Occasional physic, or alterative medicine, will often give considerable relief.

ON STRANGULATION OF THE BOWELS IN THE HORSE.

By Mr. W. A. Cartwright, *Whitchurch.*

On Saturday, June 22d, 1833, a cart horse, three years old, the property of Mr. Hughes, of Blaco, was brought to me having the belly-ach.

About two in the afternoon he was turned out to grass, having been previously working during the former part of the day, and having eaten a *little* clover whilst baiting at dinner-time. At four he was seen in the field having symptoms of belly-ach, was taken home and drenched with salt and water, and immediately brought to me.

Six p.m.—Has the general symptoms of belly-ach, and is swelled a little: gave him two ounces of the spirit of turpentine, one ounce of the tincture of opium, twenty drops of the oil of peppermint, and a dose of physic, being a bad one to drench.

Eight.—No better. Gave him four ounces of the spirit of turpentine and one ounce of the tincture of opium in some gruel,

and took four quarts of blood from him: raked, and walked about occasionally.

Ten.—No better. Rolls about a good deal on his back, and quite over, but does not get up and lie down as horses generally do with enteritis. Pulse at times quick, but at others much abated and more natural: breaks wind occasionally, and has voided water twice.

Twelve at night.—About the same. He during most of the time, and almost up to his death, shook his tail downwards, like one frightening flies from his thighs. Looks very heavy, and his respiration is quickened: I have very little doubt that inflammation has taken place from some cause.

Bled to ten pounds, which was but little buffed, and soon coagulated, and the blood drawn before did not shew the least sign of inflammation. Rubbed a strong liquid blister on the abdomen, which caused great irritation in the system, and increased the respiration and pulse much, the latter becoming audible at some distance from him, but in about half an hour after all subsided. I gave him clysters every half hour.

Two A.M.—About the same. I gave him four ounces of castor oil, and four ounces of common oil.

Three A.M.—Is easier, and stands up for a quarter and sometimes for half an hour, but the pulse gets quicker and smaller.

Five to eight A.M.—During the greater part of this time he was standing tolerably easy; is weak to tottering, and in an apparent stupid listless way, unmoved by any noise or circumstance; and about eight o'clock he fell down suddenly, and died instantly.

Examination.—The intestines were distended with flatus, and at about three or four yards from the stomach (in length from it) a part of the small ones was twisted twice quite over like a link of a chain, and a band of the mesentery was also pressing strongly upon the twisted part, and also on another portion of intestine, so as to produce complete strangulation and stoppage of them. The lengths strangulated were about a yard each, highly inflamed, and distended with air and bloody fluid. The mesentery binding the intestines was quite black, and so were other parts of it that were near.

The stomach was filled with digested grass, and contained three or four round worms and some bots. The sensible portion was highly inflamed and abraded, most probably from the turpentine, &c.

The duodenum.—On cutting through the commencement of this intestine, it was found to be quite stuffed with red bots in clusters (about 150), and with white round worms (about 150)

from seven to twelve inches in length, and as thick as a goose quill; and some of the latter were found along the intestines to the parts strangulated. The intestines did not seem in the least inflamed or abraded by them, nor were they much affected by the medicine, I only thinking them a little less active than I have seen them when found in the large intestines: one was burst, and they all were full and hard.

The food up to the strangulated part was chiefly soft, and in a manner liquid, with the exception of what was in the stomach, which was merely digested or firmly masticated.

The intestines below the strangulation.—In the small ones the food was tolerably liquid, but that in the colon and towards the rectum was just moist.

Observations.—The probable causes of this attack may be the horse eating the clover whilst up, and drinking water after being turned out, and so producing acute indigestion, spasm of the bowels, strangulation, inflammation, and death.

The most prominent symptoms in this case were, at first, the usual ones of belly-ach; such as rolling about on his back and over, looking towards his sides, and once or twice, after he had medicine given to him, shewing symptoms of vomiting; breaking wind, but not often; swelled a little; his pulse and the first blood drawn not indicating inflammation; continually batting his tail down, as if teased with flies, worms, or bots. Further on the symptoms were more indicative of inflammation, the pulse becoming more quick and feeble, and the blood drawn shewing slight marks of inflammation; and then lay more at length, and did not tumble about so much. Within about three hours of his death the pain apparently remitted, as he stood still the greater part of this time in a sleepy heavy state, only occasionally shewing distress; but his respiration and pulse were much quickened, and there was that peculiar look of the eyes hardly to be described, such as the great dilatation of the iris; in one position a glistering appearance, and in another looking like a ball of fire. He did not void his dung from the first of the attack.

ON "HORSE-STRUCK."

By the same.

In February last, Mr. Fowler, of the Green Dragon public-house, had a young horse that was perfectly well over night, and was found dead the next morning; and it appeared that he must have died suddenly, as the straw was not at all disturbed more than usual. On examining him, he was found exactly in a

similar state to what cattle are when they have been struck, viz. all about one of his shoulders and one of his hips (on the same side) were emphysematous, and gorged with blood. I did not open him, but had this related to me by Fowler, who is a butcher, and who thought him in good health.

A CASE OF DISEASED LUNGS AND LIVER IN A COW.

By the same.

March 9th, 1833.—A FARMER in this neighbourhood had a cow that died this day, and I was sent for to open her. She had been what is commonly called "going off" ever since about Christmas last, but no particular symptom or illness shewed itself, except getting thinner. About a fortnight before she died she picked calf, did not cleanse well, and has been straining more or less ever since to void it; and only for the last day or two has her breathing become increased, especially this morning.

Examination.—The liver was grown to the near side of the abdomen, was very heavy, and, to look at outside, seemed healthy; but on cutting into it I found it contained four or five abscesses, each having about half a pint of matter: the other part was filled with tubercles approaching to suppuration.

The gall-bladder was filled with bile, but very thin.

The lungs were much swelled, emphysematous, with great effusion of serum into them, and also filled with tubercles of various sizes, and in various states of disease.

The uterus, I may say, was sound, the burs nearly absorbed, and it contained scarcely any putrefied placenta.

THE SEQUELÆ OF STRANGLES.

By Mr. COOPER, *V.S., Coleshill, Warwickshire.*

ON the 27th of May, I was requested to attend a two-year-old filly, the property of Mr. Thomas Hudson, of Bassett's Pole, near this town, which had been affected upwards of a week with the strangles: the enlargement under the jaw was of considerable size, and quite indurated; and the animal had rapidly lost her condition. A blister was applied to the abscess, and in the course of two days it was lanced, when a considerable quantity of pus was discharged.

The filly, for about a fortnight after this, appeared to be gaining her lost condition, when I was again requested by Mr. H. to see her, being, he said, very lame, and the off shoulder much

swollen. I soon perceived it was a large abscess forming, and from that to the present time she has had eight or nine others formed in various parts of the body, two or three frequently discharging at the same period. I merely applied blisters to facilitate their formation, and when sufficiently pointed I lanced them. I ordered her to have oats and vetches, of which she ate a considerable quantity to the last; and also that she should be horned with gruel and ale three or four times a-day; but, in defiance of all tonic food and medicine, she became daily more and more emaciated.

The last time I visited my patient, was on the 3d of July. I found her with considerable œdema of the abdomen and extremities, presenting, in fact, one bloated mass. I informed the owner that there was no hope of recovery, and, at my instigation, he had her destroyed.

On a post-mortem examination, the whole abdominal and thoracic viscera were perfectly healthy; considerable masses of lymph, mixed with serous fluid, were found in the cellular membrane, and large quantities of pus were discovered in different parts of the body, deeply buried in the muscles. I wish to observe, that the disease left her head after the breaking of the first abscess, otherwise the case would probably have terminated *in glanders.*

ON THE USE AND ABUSE OF STRONG PURGATIVES IN THE DISEASES OF CATTLE.

By Mr. Harrison, *V.S., Lancaster.*

That purgatives judiciously administered are, under peculiar circumstances, highly beneficial, I do not mean to deny or dispute; but that free, and I will venture to call it injudicious custom of giving large and repeated doses, both practice and observation lead me to condemn: and particularly when the stomachs, their structure, and functions, together with their food, as regards quality and quantity, are minutely considered, it must and will forcibly strike every observant and unprejudiced mind, that the free and indiscriminate use of drastic purgatives is at all times doubtful; in the generality of cases, highly reprehensible, and often injurious. True it is, that there are cases and circumstances which appear strongly to indicate their application; but, beyond a certain point, I would (*by dear-bought experience*) warn all veterinarians not to extend, but adopt a cautious method, and, by so doing, restore the animal to its former state of health, and save their own professional reputation.

This practical fact I was for a length of time blinded against by a prejudiced mind, until, by the complete failure of all my expectations from their use, I was forced to resort to other, and I am happy to say better, means of accomplishing my end, viz., the restoration of the digestive organs to their natural functions; for the idea of forcing the contents of the manifolds by the continued exhibition of drastic purgatives, is folly without excuse, and cannot be palliated either by theory or practice. But it is an alluring theory, and myself as well as many others have no doubt been deceived by it: for how we are to know when the stomachs are emptied of their indigested mass, is to me inexplicable; consequently, when to refrain from administering them must also be unknown. I am not aware of one single criterion by which we can judge of having accomplished that desirable object; it must therefore be obvious to every intelligent mind, that the mischief we do in these cases, by the repeated use of violent purgatives, will produce unlooked-for consequences, and which are too often irremediable; for we know to a certainty, when rumination is suspended, that the stomachs are then likewise in an unhealthy, disordered, and torpid state, particularly the manifolds; and who will depend upon purgatives alone to restore the ruminating process? Are they not likely by such means to counteract all nature's efforts, and by exhaustion alone cause a fatal termination? No man in his senses will apply sedatives to an exhausted and debilitated patient: upon these grounds alone, i. e., considering the stomachs in a state of debility, the effects of strong purgatives when administered in such cases must be evident to all. In illustration of what I have now advanced, the relation of a few cases may possibly be useful.

Some years ago, a farmer applied to me for some medicine for a cow of his, which he stated to be one of his best milkers, but which had suddenly ceased her usual supply of milk, had a violent diarrhœa, but no hoose, and refused her food. As he did not desire me to see her, I, under the idea of disordered digestion, gave him magnes. sulph. ℔j in combination with a few aniseeds, to be given immediately on his arrival at home. In a few days he came again; the medicine had operated, but the diarrhœa still remained; she had no cough: I gave magnes. sulph. ℔j divided into four doses, one to be given every three hours. Four days afterwards he called to say the cow was dead, and upon opening her he observed nothing except the manifolds being crammed very full, hard and dry. The same week he came again, and wished me to go and see another of his best milk cows, which he stated as being like the former: upon examining her, the pulse

was not more than 64 or 65, neither was it much altered from the natural standard in any way; the eyes were not quite so sparkling as when in perfect health; the horns, ears and extremities were warm; neither did she crouch much when squeezed along the course of the spine: the skin had a harsh, dry, unnatural feel, and the hair stared a little, but there was not the slightest cough. Here then I thought was a fair field for the exhibition of strong purgatives, accordingly the magnes. sulph. ℔j was given; and the day but one following, as there was no alleviation of symptoms, another pound was given. On the fifth day she was much in the same state, and I, with my favourite object in view of relieving the manifolds of their load, and not having the most remote idea of a fatal termination, still persevered with the purgative treatment; fancying that, when the stomachs were fairly emptied, they could with ease be restored to their natural energy; but unfortunately for the owner, and contrary to his expectations and my own, she died on the sixth day. As I did not see her opened, I can only give the brief relation of the farmer, that there was a quantity of water in the chest, and the manifolds full, but of a softer consistence than the contents of the manifolds of the first cow presented. The following week the same farmer had another cow attacked in the same manner, diarrhœa, without one febrile symptom except the refusal of food: here again another field was opened, and not one solitary symptom to prevent the administration of purgatives, which accordingly was done in like manner as the foregoing, and with exactly the same degree of success; for she too died on the seventh day, and, upon opening her, the farmer informed me she was like the second case.

Last year I was called to a cow in the red-water; she had not voided any fæces for twenty-four hours, neither had she taken any food. I gave her ℔j of magnes. sulph. and a clyster of warm water in which I previously dissolved a large handful of salt, and left orders for one to be injected every three hours, until the intestines were briskly acted upon, and, as she would not drink any thing, to horn her with whey porridge frequently during the day. The day but one after, the owner came to say, the cow was much better, and the water changed, but in the evening he came in a great hurry, and said she was stopped; I therefore sent ℔j magnes. sulph. and ℥x of the ol. ricini, with particular injunctions to persevere in the use of injections until the bowels were opened. The next morning he again came, and said the medicine had not operated, and that it was with difficulty she could swallow any thing: I sent ℔j magnes. sulph. divided into four doses, one to be given every two hours. Two days afterwards, being not very distant from his residence, I went to

see the cow, and found her in a state bad enough: from what they informed me, I found the report of the salts and oil, not operating, to be incorrect; for, before he got home with the last medicine, she had commenced purging; yet, notwithstanding this circumstance, he forced the other four doses into the poor animal, and the consequences were, what might naturally be expected under such circumstances, violent purgation; indeed, she purged to such a degree, that the watery fæces appeared to be voided involuntarily. The horns, ears, and extremities, were cold, and she was evidently fast sinking under its effects, and would ultimately have done so, had I not changed my system, by rallying the overpowered efforts of nature; but how to accomplish this I was for some time at a loss. Tonics, astringents, in fact the whole materia medica, passed in review before my eyes. Practice urged me to give astringents, but prudence whispered restoratives, which finally conquered; and by administering aniseeds, caraway-seeds, ginger, gentian, &c., in good ale porridge, we rallied the expiring efforts of nature, and in less than a week she commenced eating, and rumination was restored.

Upon a review of these cases only, strong purgatives appear to possess their evil as well as good properties, but of the two, I am inclined to think the former is predominant; and experience has since, in similar cases, borne me out in thinking, that, had I placed less dependence upon purgatives, and relied more strongly upon stimulants, the first three mentioned cases would have recovered; and still more so, now I am well acquainted with the cruel mèthod of feeding these truly useful animals through a long and stormy winter, during which period every organ of the body becomes debilitated, and no particular organ so likely or liable to suffer from its severities as the stomachs themselves, which are daily and hourly in immediate contact with and under the benumbing influence of bad and indigestible, and consequently debilitating, food.

Where purgatives are required, I find it the best, and it appears the most reasonable, practice to administer them in alterative doses; and, where no febrile symptom intervenes to prevent their use, in combination with stimulants and aromatics; but by no means to persevere in their use after the intestines have become acted upon and purgation commenced, which is the object you want to accomplish; and, having done so, should rumination still be suspended, rouse the overpowered and exhausted efforts of the stomachs by stimulants, which will afford relief to the poor afflicted animals, when purgatives would destroy, of which fact the most ignorant cowleech appears to be well aware;

for we find, even in the best written treatises of the present day, a great variety of stimulants and aromatics prescribed in all their drenches.

The disorder commonly named fellon, which cowleeches consider as a cold, is for a time alleviated by the administration of one or two of their fellon drinks, which are compounded of various strong stimulants, as long pepper, mustard, grains of paradise, &c.; but their *modus operandi* I can in no other way account for than as they exercise their stimulating properties upon the stomachs, in the beneficial effects of which, in a short time, the whole system must participate. Cases are of daily occurrence where a deep-milked cow gradually ceases her usual supply without the owner's observations of premonitory symptoms, or of which, if even discerned, they are heedless, until diarrhœa commences, and the secretion of milk is entirely suspended: in such cases the excitation of increased action in the intestines by a strong purgative, debilitated as she will be from improper food and mismanagement, as well as from a great flow of milk, must be evident to all. On these attacks it is the duty of the veterinarian to forewarn his employer: although he may afford temporary relief by mild alterative doses of salts in combination with stimulants, yet the disease is not entirely subdued; for these are premonitory of more serious and fatal affections, under which the animal will eventually sink, unless they are in a great measure prevented by strict attention to comfort and good food on the part of the owner. Many cases of this sort have I witnessed, particularly in the short-horned breed, where the disease has been allowed to run its slow but sure and devastating course, without one single attempt on the part of the owner to arrest its progress; and they console themselves with the idea, that no benefit would have accrued by so doing, for she had "milked herself to death." In all cases of this sort, small is the credit attached to the science of the veterinarian, and not much better is the emolument; for let him display his knowledge to the utmost bounds of human reason, and by palliative measures ward off for a time the insidious blow of death, still will he fail in giving that satisfaction (and which is justly due to him) to his employer, which ought to be the motto and only aim of all veterinarians. The seeming difficulty in swallowing, observed in the fourth case, is of common occurrence in the generality of cases, and exists in a greater or less degree, as the stomachs are more or less debilitated, and the consequent degree of nausea then existing.

I feel conscious, Mr. Editor, that I have entered upon a wide, untrodden, yet not unfruitful field, and which may excite doubts

in the minds of many of your readers as to the profundity and solidity of my physiological knowledge; but the subject embraces one of the most important points in the physiology of ruminating animals, viz., whether the entire functions of the paunch and manifolds are by their muscular structure for the sole purpose of regurgitating and breaking down the food into a more pulpy state, in order that, when it arrives at the abomasum and intestines, it may be in a fitter state to be operated upon by them. The stake is great, and as such I hazard it; knowing full well, that no man is afraid of the results of an operation when the knife is in the hands of a scientific and humane man.

A CASE OF OSSEOUS TUMOUR SUCCESSFULLY REMOVED FROM THE NOSTRIL OF A HORSE.

By Mr. Boycott, *V.S., Devonport.*

The subject was a thorough-bred grey horse, four years old, the property of Charles Trelawny, Esq. of Plymouth. He had been in training; but in consequence of his respiration becoming very laborious in fast work, he was sent home, under the impression of being a confirmed roarer. Shortly afterwards he was turned to grass, and while there the groom observed (on the 24th July, 1832) a copious discharge from the near nostril; when he had him brought in, and on looking up the nostril he observed (to use his own words) a large fleshy substance, situated very high up; and, in consequence of which, I was requested to examine the nostril, where I found a considerable growth, which, from situation and appearance, I considered to be a nasal polypus.

From this period up to the 14th of February, the tumour continued enlarging, producing increased difficulty of breathing and deformity. The horse was then sent to my stables; and having had him thrown for the purpose of a more minute examination, instead of finding a polypus, I found an osseous tumour, which not only filled up the entire cavity of the near nostril, but had considerably encroached on the off nostril, by pressing the septum out of its situation in that direction. On an accurate investigation of its connexions and situation, I considered the tumour to be a morbid growth of the superior turbinated bone. It was, at once, evident that the entire removal of the morbid substance was the only means which could be devised as a remedy; and although I was very sensible of all the difficulties and dangers attending such an operation, yet as it was the only

means to be employed, and as the horse was useless as he was, I determined on that measure; and accordingly, on the 1st of March, having previously thrown him, I commenced the operation, by making an incision about four inches in length along the edge of the nasal bone: I then made a second incision, two inches and a half long, in a transverse direction from the superior extremity of the former downwards; and by dissecting back the flap thus formed, a large portion of the side of the tumour, which projected through the aperture between the nasal and superior maxillary bones, was exposed to view. With a chisel and a small mallet I was then enabled to remove, at first, about two thirds of the tumour in one mass, and afterwards the cavity was entirely cleared of every particle of the morbid growth, in small and detached pieces, by the same instruments. The operation was necessarily long, and attended with great loss of blood, and the horse was much exhausted on rising; however, in a few hours he completely rallied. The incisions were allowed to remain open, to favour the exit of coagula or any loose pieces of bone that might be remaining. Frequent fomentations and syringing the cavity of the nostril with a weak solution of the chloride of soda, formed the principal part of the subsequent treatment, excepting at the end of ten days, when the edges of the wound were pared off, and three sutures with adhesive plaisters were applied to bring the parts together. The horse was perfectly well at the end of six weeks, and at that time quitted my stables. He has been ridden constantly as a hack since that time, and is now perfectly clear from any impediment in his breathing, and also free from the least deformity.

The tumour, when examined, was of a conical form; the broadest part at the base, where it measured six inches in circumference; in length it was five inches; the internal structure was cancellated and spongy; the surfaces, particularly at the base and apex, were of a much firmer and denser texture.

Upon reviewing the particular points of the foregoing case, the following considerations present themselves; and any of your readers, whose experience in veterinary surgery qualifies them to the task, would be conferring a favour by replying to them:—

Are such diseases of the bones to be considered as arising from inflammation or other common causes? or are they to be classed with the disease which, in the human subject, is designated osteo-sarcoma, and which is always considered most malignant and fatal?

And what forms of disease is the horse liable to which assimilate with those affections in the human subject that are classed as cancerous?

Although, in the present case, art has been eminently successful in the removal of a most formidable disease, yet the ultimate and complete success to be anticipated in similar cases, must be governed, in a great degree, by what may be the issue of the foregoing considerations.

THE VETERINARIAN, AUGUST 1, 1833.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

ON VETERINARY CONSULTATIONS.

We have often wondered that no one among our numerous and talented correspondents has taken up this subject. To the mere pretender, a consultation with another practitioner of established reputation, as to the course to be pursued in a case which he has been treating with doubtful success, may be a serious affair, because it may involve the detection of gross ignorance both of the nature of the disease and the principles of sound practice. The man of acknowledged talent, yet who is wedded to his own fanciful views on many a subject of daily occurrence, may wish to avoid the certainty of difference of opinion when brought into contact with a straight-forward practitioner, who cares little about theoretical notions, but is guided only by the evidence of his senses and the testimony of experience; and many of us, recalling to our recollection this and the other instances of illiberality, jealousy, malignity, and want of all professional courtesy and honour, which have teazed and injured us in these communications with our professional brethren, may be a little averse to submit ourselves to the possible recurrence of them.

These consultations, however, properly managed, might be, and are considered in human practice to be, very desirable and useful things. We will suppose that we are in attendance on a valuable animal; we have made ourselves perfectly masters of the case; our attention has been unremitting; but the horse is not doing well, and the owner, although he does not tell us so,

is evidently a little dissatisfied. No one but the honest practitioner can tell what a source of anxiety and discomfort this is. If we knew a brother veterinarian, of whom we could be assured that he would not compromise our professional reputation; that he would not take advantage of the opportunity we gave him to assume superiority over us, or damn us with *faint, hesitating praise,* how eagerly should we advise our employer to have recourse to him; and how pleasantly might we work together in accomplishing the grand objects of our profession, the relief or restoration of our patient, and the preservation of the property of our employer! Never will two friendly honest practitioners meet together in this way without some new view of the disease or its treatment being elicited. The old adage will, with rarely an exception, be verified, that "two heads are better than one;" and that good understanding which should subsist among us, so becoming, so useful, so delightful, will be effectually secured.

As to the manner in which our few meetings of this kind are conducted, two or three anecdotes, relating to us individually, may give sufficient illustration. We were, at the outset of our career, friendly to these consultations; and when the matter rested with us, there was one gentleman whom, for a little while, we used generally to call in. We were, after the second or third time, somewhat dissatisfied with his manner; and at length there seemed to be such a frequent and almost inseparable connexion between the visits of Mr. ——, *and the loss of our employer,* that we began seriously to take alarm.

We believe that we were always scrupulously punctual in engagements of this nature; but the consulting surgeon used often to be a quarter or half of an hour before his time: therefore we missed him altogether, or only saw him when he was about to get into his gig and drive away.

He never used to wait a moment for us, but proceeded to examine the patient, and question the groom or coachman, with many a consequential "umph!" and "ah!" and then he had his regular interview with the proprietor; but at first he did us the

favour, or the right, to say, that he would not order any particular medicine until he had communicated with us.

When, probably observing our dissatisfaction, he became more punctual, there was not an action, or a gesture, which did not bespeak the great man lending his assistance to a mere under-strapper. The questions put to us were put in as authoritative a tone, or even more so, than to the underlings of the stable; and after he had obtained the information he required, his opinion was given, without reservation, in the stable, and before them all: fault was found with this medicament, and another was *ordered* to be substituted; and then came the cold withering commendation,—" he dared to say Mr. —— would do all that was necessary, and he would call in again in a few days, to see that all things were going on well."

The mystery was now unravelled, and we determined to have nothing more to do with Mr. ——; and a circumstance occurred a few days afterwards which perfectly settled our resolution. A horse belonging to a titled lady had been very ill, but was recovering securely enough, yet not so rapidly as to keep pace with the impatience of the owner. One morning we were desired to be at the stables, at a certain hour, to meet Mr. ——. We were there to a minute. " I am afraid, Sir," said the coachman, " there is something wrong: Mr. —— has been here, and he has been with my lady in the drawing-room, and we heard him talk about coming again to-morrow." The coachman was perfectly right. We desired that Lady —— might be informed that we were waiting, and we received in answer, that her Ladyship did not wish us to call again, and that we might send in our bill as soon as we pleased. It may be supposed that we never sent for Mr. —— again; but we did again and again refuse to meet him, always giving our reason why, and that without hesitation or scruple.

About a month afterwards, however, we had another precious sample of the mingled ignorance, and impudence, and rascality (we were going to say) of those who, from their situation, ought to be lights to their professional brethren. We were attending a young and very promising horse, on which the owner put great

value. It was a case of suppressed strangles. The tumour was at length beginning to come forward; but the owner was impatient. We received a note, in which we were requested to attend at a certain hour, in order to meet Mr. ——. We were punctual to our time, and we found not Mr. ——, but one of the persons about his establishment. He had been in the stable about five minutes; and, without the common courtesy of waiting even that brief time, he had satisfied himself about the case, and had his lancet out, and in another half-minute would have bled the horse.

Years passed, and we were afraid to call in any one; and when we saw our way tolerably plainly, we resisted, so far as we could properly do so, the wish of our employers on this point; and, perhaps, our practice is yet a little tainted by this dislike. We have, however, of late years, occasionally fallen in with gentlemen, and honest men, in these meetings; and yet, if we dared to tell them so, we were not quite satisfied even with them. It is not yet the consultation that we could wish.

One friend is generally as punctual as ourselves to the time; he is never before it; and we have our private confab out of earshot of the groom, and in which he is put in possession of all the circumstances of the case. He then examines the horse, and asks what farther questions he thinks proper. We retire again, and determine on the nature of the disease, and the course indicated by the prevailing symptoms. We afterwards see the owner, if he is in the way, or rejoin him if we had retired from him; and my friend says, "Mr. —— and myself have agreed that the disease is so and so; it will probably terminate so and so. Mr. —— has been giving the proper medicines, and we must continue them with a little modification: or we have determined to see what a change will do in such a case; these changes are sometimes useful. The case cannot be in better hands." All this is very well; and we do not think that any bribe could tempt our friend to cross the path of another practitioner, or do him a serious injury.——But he is a theoretical as well as a practical man; he has his peculiar views (as we just now hinted most of us have) on many or on almost all diseases,—their causes, nature, and modi-

fications: and, ten to one, if he does not start some of them before he has done, and follow them up too. We, simple souls, had no such notions about the matter, and had not said a word relating to all these fine things; and on the following day the owner turns upon us, "Why, Mr. ——, you never told us any thing about this; I can understand the case now; *should you have done exactly so and so?*" and thus, with every wish to do that which is honourable, our friend, now and then, effects no little mischief.

Another friend, as good a fellow as ever lived, and who would scorn a dirty transaction, does his share of mischief in his way. He might have gained, he probably had gained, from us all that it was necessary for him to know, but he puts the same questions to the groom; he puts some of them *incautiously*, we may almost say *suspiciously;* and then, long ere he is out of earshot, he begins to give his opinion, and tells us what should be done. He does not make it a consultation, but he pours forth his dicta, good-naturedly, but authoritatively, and, if we attempt to reply, he is in a hurry, and must be gone: however, he must previously accompany us to the stable, or the drawing-room, and there he enters a vast deal too much into particulars, and speaks of half a hundred things which never entered our minds, and of the propriety or even the existence of which we have not the slightest belief. And thus he too does harm where he dreams not of it, and would not for the world be the voluntary cause of it.

Shall we lay down a few rules, by which our consultations may be guided, and which will make them pleasant and useful?

In the first place, all those assumed airs of importance, which in nineteen cases out of twenty are the mere cover of incompetence, should be laid aside. One practitioner meets not the other, to be reminded of or to admit his inferiority. He comes not prepared to sacrifice his relative reputation, and possibly the confidence of his employer, to the false, or, at least, the obtruded pretensions of another. Friend meets friend, to consult together on the accomplishment of a very important object,—the assuaging of the pain or the saving of the life of a valuable animal;

valuable at least in the estimation of its owner. We do not say that seniority in practice should not claim a kind of precedence; that will be readily yielded by the junior, but which does not imply a sacrifice of reputation or of opinion.

The object for which they meet should be held sacred by both—the restoration of the patient. The surgeon first employed is bound by every principle of honour to put his coadjutor in possession of all the circumstances that can assist him in coming to a right conclusion. Concealment here is the most disgraceful species of treachery. Even although he is beginning to suspect that some, at least—possibly much—of the danger is to be attributed to his erroneous judgment in the first instance, or to the wrong measures which he had afterwards pursued, still he is bound to speak the truth, and the whole truth. We have no hesitation in saying, that we would never again meet in consultation the man who had once deceived us here; and we would at all times tell at once the reason of our refusal.

The consulting surgeon is likewise bound, as far as he is able, by all due inquiry (but not like our last friend's incautious or suspicious questioning), to get at the previous history of the case, and, after that, to make the best use of his senses in appreciating the present state of the animal.

Then comes the laying of the heads together. Here between man and man there should be no concealment. Away from the owner, away from the stable-people, the matter should be fully and candidly discussed. It will not be thought surprising if at first there should be some contrariety of opinion. Even in human medicine, far, far more advanced in its progress towards certainty than the veterinary art, there are very few who entertain precisely the same views of theory and practice on any point. Let the matter in dispute be canvassed in the spirit of truth and friendship, and it will not be often that both will continue to be obstinate. The consulting surgeon, so far as he can conscientiously do it, should yield, for he has seen the case but once—the other has watched it through all its stages; unless, indeed, far superior length of practice may be supposed to have given

him a kind of intuitive knowledge of disease, which the young man does not readily acquire. In the majority of cases, a little conversation will make them approximate so far, that they may retain the supposed beneficial effect of the plan of each, without its possible bad consequences.

This being accomplished, not one word is to be hinted of the previous difference; but the consulting surgeon will declare the result of their deliberations. It will not be always necessary to define the precise disease—that may be left for future development. He will say what he conscientiously can of the propriety of the previous treatment, and that which he does say he will say freely and off-hand.

But supposing that they cannot agree, is the difference to be stated to the owner, and argued before him? No, nothing about it:—but the consulting surgeon is to say, and as briefly as possible, that they cannot agree in their opinion, and that it will be advisable to call in a third practitioner. This will usually set the thing square and right, and, if these practitioners are men of honourable feeling, the owner never need to know, and never should know, the point of difference.

A great many, or all of our practitioners, must wonderfully alter their conduct, before they can arrive at this desired state of perfection; but it is the true character of what veterinary consultations ought to be.

But supposing that either the attendant, or the first consulting surgeon, is still obstinate, why, there is no help for the matter: the patient must be saved, if possible; the grand object of our consultations *must* be accomplished; but nothing short of this can justify the injury or the ruin of a rising or an established reputation.

This brings us to the second object, which should be held sacred in consultations,—the professional reputation of each. In an infant art like ours, with so many obstacles to overcome ere it can be established as it deserves in public estimation, there should be a kind of *esprit du corps*. It is a principle of human nature. It has been carried to excess, and been productive of violence and folly; but without it no science depending on the

joint exertions of its professors ever prospered: and worst and most fatal, among the many obstacles to the advance of veterinary science, are the despicable jealousies and rivalries which have existed and continue to exist among us.

Self is the prevailing principle with most of us; but yet there is a tacit compact to promote the honour and the interest of the association to which we belong, and that consists in the honour and interest of the individual members of which it is composed.

This then is the second object, and base are they who sacrifice it. The professional reputation of each should be dear to each; and in the manner which we have described it, may be sacredly preserved without the slightest violation of our duty to our employer.

There is temptation, strong with the dishonourable man, but which would be contemptuously rejected by every well constituted mind. We are practising in the same town, or the same district, with a rival who often crosses our path, and to whom, perhaps, some of our old customers have seceded. He has a difficult case; there is a little lurking dissatisfaction in the mind of the owner about it: we are summoned to a consultation with him; we have him in our power;—one word, one hint, one gesture will suffice. Shall we wreak our revenge, shall we rid ourselves of him? No! no!! no!!! we will not act so despicably: we will meet him fairly and honourably; we will win his friendship in spite of himself; and we will lay the foundation for much useful and pleasant intercourse. Honesty is the best policy here, more perhaps than in most other cases, for there are few things so delightful as association with a neighbouring practitioner whom we can esteem and trust.

Well, then, in order to regulate these consultations so as to produce this consummation so much to be desired, shall we endeavour feebly to sketch a few things that should be attended to? We have already hinted at some of them.

Never, in the previous examination of the horse, let one word drop as to the nature of the disease, or its probable termination, or its present treatment.

Never ask a single question that bears upon its face the character of doubt or suspicion.

Never, by countenance or by gesture, give any one occasion to suppose that you are dissatisfied or doubt.

Your very questions—address most of them to the attendant surgeon.

Lay aside all your assumed nonsensical consequence (it may impose upon fools, but wise men will see through it), and meet your brother practitioner as friend should meet friend, and let your countenance and tone of voice express this.

Never come before your time purposely, and as it were to have the field to yourself; and if your brother practitioner is not punctual, give him five minutes—give him ten if you can, and then, if he comes not, proceed to the careful examination of the animal: scarcely give an opinion as to the nature of the disease, or, if you do, let it be in one word: give a very guarded prognosis: and for your own sake, as well as for the sake of your brother, give no opinion of the treatment,—make no change in the medicine, for you are incompetent to both, and may injure your own reputation as likely as that of the attendant surgeon. If you are scoundrel enough to hint dissatisfaction or to glance at possible error, when you cannot be a judge in the case, and your opponent is not by to defend himself, depend upon it that the execration of your brethren, and your own secret contempt of yourself, will pursue you to your life's end.

Having possessed yourself of the leading circumstances of the case, say that you will make a point of seeing Mr. ————, and consult with him as to the course to be pursued.

Having met him, and satisfied yourself as to the state of the patient, still give no opinion while others are standing by, for you know not what the other may have previously said; and the least clashing, even where you both mean the same thing, may be awkward, and should be avoided.

Then in your consultation together endeavour to make yourself thoroughly master of the opinion which the attending surgeon has entertained or expressed of the case; and although it may not perfectly coincide with your own, take care that, in your report to the owner, you drop not a syllable that can clash with it. An opinion delivered in few words, and in the most

general terms where there may be slight shades of difference, and entering more, yet very cautiously, and never to any great extent, into particulars where your sentiments appear to coincide, will be all that you should ever venture to give; and sacredly should you refrain from every syllable indicative of your own peculiar theories on the disease. Your objects are, to save the life of your patient and the professional reputation of your coadjutor. In the circumstances in which you are then placed, you have nothing to do with any thing beyond this; and however disposed you may be to act honourably, you will not quite do so, if you advance a step beyond this limit. The very feeling that your brother is to a certainty in your power, will make you exquisitely sensitive to every thing that can by possibility injure him.

The repetition of visits should never be proposed by you. There is something disgraceful about this;—it savours at once of suspicion, or imagined superiority of tact and knowledge: but there is no reason that you should not readily accede to the wishes of the owner or the attending surgeon if a continuance of your attendance is desired.

And, last of all, the consultation being over, there is an imperative duty too often forgotten, yet that can never be so without loss of honour. You have been peculiarly situated with respect to the attending surgeon. To enable you to perform your duty, he has not scrupled to expose to you his errors, perchance his ignorance on certain points. You have obtained that with regard to him, which you could not have gained except you had met in the discharge of an important duty. What is the inevitable consequence?—not only that you were bound to protect his professional reputation in the estimation of his employer, and which yon have done, but that all that passed between you is sacred; and that the man who would divulge, to the prejudice of his brother, secrets thus obtained, has forfeited all claim to respect, and should be hooted from society. The breach of such a compact shews a despicable, yet fearful, recklessness of heart and of conduct.

There are some minor points connected with this subject which may afford matter for future consideration.

Y.

Veterinary Jurisprudence.

Blackwood *v.* Wright.

This singular trial may afford our readers some amusement, and instruction too. In order to render it intelligible to our readers, we must begin with the ending. The Lord Ordinary's luminous statement, when he passes judgment, embraces the main facts of the case, and enables us to understand the testimony of the two farriers, and the two veterinary surgeons. The evidence of Messrs. Dick and Henderson does them much credit; and we apprehend that, if two of our southern veterinarians were examined apart, and at such length, and so closely on many a case far less complicated than this, there would be much more difference in their testimony than the time which the formation of such a tumour, if tumour there were, might probably occupy. We wish to put such a case upon record: the advantage which may hereafter result from it, and the many hearty laughs it will, at present, occasion, are sufficient apologies for its length.—Edit.

22*d Feb.* 1833.—The Lord Ordinary having resumed consideration of the debate, and advised the process, Finds it established by the proof, that the advocator (defendant) did not offer the horse in question for sale, but that the respondent (plaintiff) selected him, and sent his friend Fergusson to purchase said horse for him: Finds, that the advocator upheld the horse to be whole and sound; and though not in high condition at the time, it was purchased as such on 21st Nov. 1829: Finds, that the horse was delivered on the 23d to the respondent, and was worked moderately; that the horse soon shewed symptoms of being somewhat unwell, being out of spirits, and occasionally uneasy, not feeding nor dunging well, and then got better; that, on Saturday the 12th of December, the horse was again unwell, but next day got better; that, on Monday the 14th, the horse again became ill; that Goudie, a farrier, was called, and who administered medicines; and, having become worse on Wednesday, Wright, another farrier, was called; but the horse died on the same day: Finds, that although the veterinary surgeons gave it as their opinion that the horse was not very skilfully treated, and that more active medicines should have been tried,

they do not say that this better treatment would certainly have saved the horse: Finds, that the horse was opened on the same day on which he died; and it is established by the testimony of the two farriers, and of two other witnesses, that there was an internal growth of a hard substance in the intestines, and that this was the cause of the inflammation in the intestines, so far as there were such symptoms, but that acute inflammation was not the cause of the adhesion: Finds it stated as the opinion of these persons, that this growth was the cause of the horse's death; and that it must have been the growth of some months' duration—one of the witnesses says six months: Finds, that both Dick and Henderson, the veterinary surgeons, consider the disease a very uncommon one, and which they profess not to understand from the description given; but they do not state that such a disease could not exist, and one of them admits that he has seen one instance of the kind: Finds, that these two witnesses, while they differ in opinion with the two farriers as to the cause of the death of the horse, differ also from each other as to the cause of the death; but finds that Dick depones, that he would consider that a growth, such as is proved in this case, was caused by chronic inflammation, and of considerable standing, although he cannot specify the time; and that a growth caused by acute inflammation would exhibit symptoms of inflammation on dissection: Finds, that Henderson states that a tumour of the consistency described would take two months, or, at least, six weeks, to form: Finds it thus established, that the disease of which the horse died was contracted prior to the sale: Finds it admitted, that next day the advocator was informed of the death of the horse, and asked to come and inspect the intestines, which had been preserved for that purpose, which he declined: Finds, that till the *post-mortem* examination, it could not be ascertained that there had been unsoundness at the time of the sale, as all the symptoms might have existed, and the death might have proceeded from a supervening disease subsequent to the sale; and therefore finds, that there was no undue delay in intimating the claim under the warrandice, as it was done as soon as the latent defect was discovered on inspection, and therefore as soon as the respondent knew that he had right to go against the advocator: Advocates the cause: Decerns for £30, as the price of the horse, with interest from 16th December 1829, and till paid, together with the expenses as decerned for by the Sheriff: Finds the advocator liable in the expenses of this process, of which allows an account to be given in, and remits to the Auditor to tax the same, and to report. One word delete.

(Signed) J. H. Forbes.

Pursuer's Proof.

John Fergusson proved that he bought the horse of defendant for and at the desire of plaintiff. That, on remarking that the horse was out of condition, the defendant replied, that the horse had never had a brash while in his custody, and that he upheld him to be whole and sound.

W. Roy, servant to the plaintiff, deposed that he observed, that, on the day after the purchase, the horse could not get 'dunging,' and only dunged a little and with difficulty, and did not feed well, and was not in spirits as other young horses are.

John Boyle, ploughman to the plaintiff, deposed that two or three days after the purchase, the horse seemed uneasy, and tumbled and rolled, and did not feed; and he was in this state for nearly a night. That about eight days after this the horse was again unwell, and that two days afterwards he died.

Charles Goudie, smith and farrier at Stepends, being solemnly sworn and interrogated, depones, that he has attended to the diseases of horses and cattle for eighteen years past, but he never studied at the Veterinary College, and has no diploma, and for these eighteen years he has been called out as a farrier. Depones, that, upon the 14th day of December, 1829, he was called out to look at and inspect a horse in the possession of the plaintiff, which he said he had got from the defendant. That he found the horse, as far as he could judge, with a disease upon the bowels; that he prescribed for the horse half an ounce of laudanum, and half an ounce of nitre, and he also gave the horse some clysters; and upon the same day, sometime afterwards, he bled the horse. That next morning, about four o'clock, the deponent was sent for, and went and found the horse a great deal worse, and still shewing symptoms of pains in the bowels; and, for fear of inflammation, the deponent took two and a half Scotch pints (five quarts) of blood from the horse, and, on examining the blood, he found it quite free from inflammation. That the deponent observing that the horse was still getting worse during the course of the day, he requested the plaintiff to send for another farrier, which he agreed to, and Thomas Wright, farrier at Drummullan, near Trochraigue, was sent for, and he came upon the Wednesday; and when Wright was sent for, he sent word he could not come till the Wednesday, but he ordered that a bottle of castrol oil should be given to the horse, which was done accordingly. That when Thomas Wright came upon the Wednesday, the deponent had left Dowhill, and the deponent was againt sent for that day after the horse died, and the deponent was present when the horse was opened in the presence of

the plaintiff, Mr. Murray in Dunnymuck, Thomas Wright, and some of the plaintiff's servants, and the deponent made a thorough inspection of the cause of the death, and found the small guts grown to the back at the kidneys, and the growth extending downwards, which growth stopped the mouth of the fundament or anus, so that the horse could get no passage, which, with a great growing upon the lungs, was, in the deponent's opinion, the cause of the horse's death; and, in the deponent's opinion, this growing, both from its appearance and size, must have been upon the horse six months before his death. That it was quite good daylight when the deponent made the above inspection. That Thomas Wright was present when the deponent made the inspection, and Thomas Lyle, a witness in this case, came soon after the horse was opened. That, in the deponent's opinion, the above disease must have prevented the horse from dunging freely. That there was no common inflammation upon the horse, except at the part where it was diseased, and 'his guts were as clean as a new-killed sheep' without disease. Interrogated for the defendant, and desired to say, when he prescribed laudanum and nitre for the horse, what he considered the nature of the trouble under which he laboured? Depones, That he considered the horse was labouring under a disease in the bowels, such as cholic and grippings. Interrogated, If by grippings he means inflammation? Depones, That he does not, as he did not think the horse was labouring under inflammation. Interrogated, What he considered the grippings with which the horse was affected arose from? Depones, That he considers these grippings to have arisen from the growings after he saw him opened. Interrogated, If the horse could have been affected with grippings in his bowels without inflammation? Depones, That he might. Interrogated, If the medicine prescribed and given to the horse was intended to allay inflammation? Depones, That the medicine prescribed was to quell any grippings, but not as to any inflammation, as the horse had none, according to the deponent's opinion, and the state of the horse's blood. Interrogated, If the medicine given was intended to operate as a purgative? Depones, That it was. Interrogated, If the bleeding was intended to remove inflammation, or for what other cause was it resorted to? Depones, That the bleeding was intended to keep back or prevent inflammation. Interrogated, If the horse was affected with cholic at the time? Depones, That the first time he saw the horse, he was affected with cholic, and it had continued for three hours, and he bled him for fear of inflammation ensuing. Interrogated, If the clysters and castrol oil were given to remove the cholic? Depones, That they were. Interrogated, If the

growing which the witness observed of the guts to the kidneys, when the horse was opened, was not the consequence of previous inflammation? Depones, That in his opinion it was not. Interrogated, From what other cause the growth or growing proceeded? Depones, That he can give no cause for it, as he never saw such a growth before. Interrogated, If growings upon the kidneys or adhesion of the parts do not generally proceed from inflammation? Depones, That from the growth which he saw upon the horse when opened, he does not consider it to have arisen from previous inflammation. Interrogated, and desired to describe the nature of the growth spoken to? Depones, That the nature of the growth was of a pretty large substance, as large as his foot, and of a firm substance. Interrogated, Whether the growing was attached to the kidneys, or if there was an adhesion of the small guts to the kidneys? Depones, That the growing was attached to the back, and extended down to the anus, as before deponed to. Interrogated, If it was from the size of the growing alone that the witness considered it of long standing? Depones, That it was from the size, firmness, and growing, that it was of long standing. Interrogated, If, on inspection, he found any inflammation in the kidneys? Depones, That he found no inflammation of the kidneys; but from the extension of the growth he considered that the cause of the horse's death. Interrogated, If the growing was of itself sufficient to cause death, without inflammation and mortification? Depones, That, in his opinion, he considers so, and that these growings could have caused death without inflammation or mortification. Interrogated, If a horse having the growing of the intestines, such as described by the witness, [could] have a healthy appearance, and perform his work without difficulty? Depones, That he may do so, but with some difficulty, and have a healthy appearance. Interrogated, If, when a horse is diseased in his inwards, it has not a considerable effect on his hair and the general spirts? Depones, That it has. Interrogated, If, before he prescribed for the horse, he was told that he had had difficulty in dunging? Depones, That he was not, and never saw the horse until he was called on. Being specially interrogated, and desired to say, If the growth so often spoken to did not originally proceed from inflammation? Depones, That it did not, in the deponent's opinion. Interrogated, If in place of a growth it was not rather an adhesion of the parts the witness observed on the horse's intestines? Depones, That these growths were the cause of the horse's death, and he is satisfied they were growths: that there were two growings in the horse's inside—one on the lungs, and the other extended downwards; and, in his opinion, any one of them was sufficient to

kill the horse; and he considered them perfectly incurable, and of long standing. That the deponent has seen different horses opened which died of inflammation, and the appearance was all red in the parts (intestines), but no growings of any firm substance, such as he saw on the horse in question. All which is truth, &c.

Thomas Wright, blacksmith and farrier at Drummullan, being solemnly sworn, &c. and interrogated, depones, That he has been in the practice of attending to the diseases of horses for these forty-five years: That he remembers of being called upon, upon the 15th or 16th December, 1829, to look at a horse which the plaintiff had got from the defendant: That the deponent accordingly went there, and found the horse in a dying state, and he died that day: That the deponent saw the horse after his entrails were taken out, and he then formed his opinion of the cause of its death, and he is still of the same opinion that the horse's death was occasioned by a growth of his entrails at the kidneys to the back, and that it had been of long continuance from its size; and on examination of the growth that had attached the entrails to the back, which was of a blackish colour, and, in his opinion, this growth would stop the passage and prevent the horse from dunging: That when the deponent first saw the horse, he put his hand up its fundament, and he felt the hard substance pressing against his hand; and after the horse was opened up, the growth in his inside was of a hard nature, resembling the lure of a cow when cut; and, after ascertaining and examining the horse, he was satisfied that the above growings were the cause of the horse's death, and therefore he examined no farther; and, in his opinion, that this growth could not have been formed in less than six months; and, in the deponent's opinion, a horse labouring under such a disease, must have felt difficulty in dunging: That the deponent saw no inflammation upon the intestines, except at the place where the growing was. Interrogated for the defendant, depones, That he never studied farriery at any college, but he has for many years received instructions, and studied the diseases of horses, first from his father, and afterwards from Mr. Pinkerton in Glasgow: That both his father and Mr. Pinkerton were blacksmiths, and these two persons were often called to give their opinion as to the diseases of horses: That after the deponent first saw the horse, he went home, but was sent for again on the same day, after the horse had been opened and his entrails taken out: That the size of the growth was, in the deponent's opinion, his only reason for saying that the growth had been of long standing: That the night before the deponent was sent for, but could not come;

but he ordered some castrol oil, which he believes was given: That he did not order this castrol oil under the impression that the horse was labouring under an inflammation, but only as a safe medicine: That he considers, that half an ounce of laudanum, and half an ounce of nitre, could have done the horse no harm: That the principal part of the growing was upon the kidneys: That the growth he saw upon the horse was inflamed at the time, and he saw no other inflammation upon the horse. Interrogated, If the intestines of the horse had been inflamed for any length of time previous to his being opened? Depones, That they were not, but that the part where the growing was attached to was inflamed: That from the appearance of the horse after he saw him opened, he might when living sometimes do his work, and sometimes not: That the deponent has often seen horses opened which had died of inflammation, and the appearances of inflammation were of a red colour, and not of the appearance which the horse in question had; and he considered the disease of the horse perfectly incurable. Interrogated, What, in the deponent's opinion, occasioned the growing in the horse in question? Depones, That he cannot say, and he never saw a horse in the same situation as the horse in question. All which is truth, &c.

Robert Murray, farmer in Dunnymuck, depones, That he looked at the intestines of the horse, and saw a growing from one of the lobs of the liver, and which went down along the back, and grew into the intestines of the horse: That there was a little appearance of redness on the growing part and towards the intestines, but none on the intestines generally: That this growing was something of the appearance of a cow's udder or lure, and of a solid substance: That this growing was from eight to ten inches long, and from one to two inches thick, and nearly as broad as long, and it tapered down towards the back.

Defender's Proof.

Thomas Lyle, innkeeper in Girvan, depones, That he saw the horse after he was opened, and it appeared that adhesion had taken place about the kidneys, and the kidneys were considerably inflamed: That it is possible that adhesion will take place without inflammation; and where adhesion has taken place, inflammation generally pitches upon that place: That inflammation might have been four or five days on the horse before he died; but adhesion or growths might have been on the horse months before he died. Interrogated, Whether, after a horse has been seized with inflammation in the kidneys, he will have a healthy appearance, and perform his work without difficulty? Depones, That he could not. Depones, That on the day

the horse was delivered, he had not the appearance of labouring under any disease. Interrogated, Whether, in the deponent's opinion, it was not inflammation and mortification of which the horse in question died? Depones, That in his opinion it was mortification which carried off the horse, whatever may have been his previous disease: That it was in the diseased parts where the deponent found the inflammation; and from what he saw, it is his opinion that there were growths at these diseased parts: That there was no general inflammation in the intestines: That the inflammation that he saw on the animal was generally about the kidneys: That by growth he means, that an adhesion had taken place; and he saw no enlargement of the parts so as to term it properly a growth; but it was in the gloaming time when he made the observation: That so far as he could discern, there was no growing on the kidneys, but an adhesion of the parts. And this is also truth, &c.

John M'Gill, servant to the defendant, depones, That he wrought the horse in question during the preceding summer, in carting and ploughing, and he was a sound healthy horse for any thing the deponent saw; and he fed well, and the deponent considered him as good a feeding colt as ever he saw, and he wrought well, and was quiet: That he was sleek in the hair, and was so when delivered; and was frequently playful in the field and at watering, down to the time of delivery, and had no difficulty in dunging that the deponent saw; and the deponent fed and took charge of said horse, and observed all the healthy appearances now deponed to: That before the sale, the horse was not kept up for the market, but was fed and wrought like the defender's other horses.

James Maitland, weaver in Girvan, deponed, That he was servant to the defender for twelve months preceding Whitsunday last: That while in the defender's service, he had occasion almost every day to see the horse in question, both in the stable and at work, and said horse was a sound, healthy horse, and sleek in the hair, and fed very well, and performed his work very well, and continued in that state down till the time of delivery, and was playful and in good spirits: That before he was sold, he was not kept up for the market, but was fed and wrought like the defender's other horses, and never knew said horse to be unwell, and he dunged like another horse.

John Gillespie, flesher in Girvan, deponed, That he has been a flesher for twenty-two years: That he has seen the horse in question, before he was sold to the pursuer, many times, in passing and repassing, and the deponent thought him a sound healthy horse to his view, and the deponent has seen him plough-

ing and harrowing: That he has often assisted in opening and dissecting horses: That in his opinion inflammation will bring on growing in a horse's inside: That there might be a growing in the inside of a horse without inflammation.

Robert Barr, veterinary surgeon, deponed, That he has attended a course of lectures by Mr. Dick, veterinary surgeon in Edinburgh, for nine months, and got a certificate qualifying him; and it is six years since he was so qualified, and he has since practised as a veterinary surgeon: That inflammation in the bowels of a horse, particularly about the kidneys, and adhesion of the inflamed parts, is sometimes very rapid in its progress, and causes death in a few days: That it is more rapid in some horses than others, owing to the extent of it. Interrogated, If while labouring under the disease of adhesion of the intestines to the back and kidneys, a horse will have a sickly appearance, or would he eat and dung well? Depones, That it depends upon the rapidness, and extent or violence of the inflammation, and whether it is chronic or acute; and chronic inflammation or adhesion may go on for a considerable time without causing any injury to the animal's health: That adhesion of the intestines, when to any extent, will form a growing or protuberance on the parts: That when a horse changes hands, it does often happen that his appearance, and the state of his bowels, are changed from the mode of feeding or other causes? and that he has seen, in many cases, that the change of feeding and stable management often changes the constitution of a horse: That where a horse dies of the disease called inflammation, the intestines are generally inflamed, and of a reddish colour; and sometimes the disease ends in mortification, and sometimes in effusion, or water in the belly. Interrogated, Whether it sometimes happens that there is a growing or growth in the inside of a horse, distinct from adhesion, occasioned by inflammation? Depones, That there are sometimes concretions formed in the bowels themselves, particularly on old horses; but he has never seen it in young horses. Interrogated, If where there is a growing upon the inside of a horse, the period of the commencement of that growth is to be judged of by its size and solidity? Depones, That it must, from its nature and size. Interrogated, Whether a growth about eight or nine inches square, and about two inches deep, and of a solid substance, could form in a short period? Depones, That he could not give a decisive answer to the question unless he had seen the growth. Interrogated, If a growth from the back of a horse pressing upon the intestines, will prevent that horse from having free passage? Depones, That if the pressure of the growth comes to form an obstruction on the bowels, it will

prevent free passage, and bring on inflammation: That in his opinion a change of stable and diet would not bring on such a growing as the one above described: That a horse on whose intestines there is a growing of the size just now alluded to will have a healthy appearance until the disease comes to irritate upon any of the vital parts: That after a growth had fixed on the intestines, the horse might have a healthy appearance for the period of three weeks. It is impossible, from the size and solidity of any growth found on the intestines of a horse, to fix the exact period of its commencement.

Compeared William Dick, veterinary surgeon in Edinburgh, who being solemnly sworn, &c. and interrogated for the defender, depones (after hearing the facts, as stated in the pursuer's proof, read over to him, as contained in the evidences of Charles Goudie and Thomas Wright), That the intestines of a horse are connected to the spine by the mesentery. Does not recollect to have seen any case of diseased adhesion of the intestines to the mesentery; but that substance might become thickened or enlarged, either by chronic or acute inflammation; and that if much enlarged, it might have the appearance of a growing, to a person ignorant of the anatomy of a horse. Depones, That adhesion can never take place without previous inflammation, which is the cause of it. Depones, That if, upon dissection after death, a large growing should be found upon the intestines of a horse, it is impossible for any one who had not seen the horse till within a day or two of his death, to say, from inspection, that the adhesion or disease had been upon him for any particular period—certainly not for six months; but much would depend upon the nature of the tumour. Depones, That in the whole of his practice, he never saw an instance of a diseased growing of the small guts to the back at the kidneys. Depones, That he never met with any case of a growth, such as that described by Charles Goudie, as stopping the mouth of the anus. Depones, That he considers such a growth of a very rare occurrence; and that, although he has met with growths or tumours in various parts of the abdomen, he never saw or heard of such a one as that described as having occurred in the horse in question. Depones, That where there is a growing on the lungs, as described in this case, there is always a derangement of the general health; and that where an obstruction is produced in the manner described, he should expect occasional derangement in the bowels. Depones, That it is quite possible for a horse, labouring under disease of the lungs, to have a glossy coat, although generally it has the opposite effect. Depones, That the diseases described, when combined, would be more apt to de-

range his coat. Depones, That a horse with the disease described would not be playful and active at his work, and eat well, till within a fortnight or three weeks of his death. Depones, That if a horse were hard worked in the month of November, till he was put into a profuse sweat, and had then a large quantity of cold water given to him, this would be extremely apt to produce inflammation of the lungs, or of the kidneys or intestines. Depones, That a horse may be seized with inflammation, and adhesion of the parts take place, and a swelling or protuberance be found, and the horse die in consequence, all in the course of two or three weeks from its first commencement. Depones, That change of diet, situation, and general management, is often the cause of inflammation. Depones, That inflammation of the lungs may cause them to swell beyond their natural size. Depones, That no growing or tumour can take place on the lungs without previous inflammation. Depones, That inflammation cannot take place, to such an extent as to produce tumour or growing on the lungs, without producing corresponding symptoms, which might at least be detected by a professional man. Depones, That there is no way of ascertaining the existence of inflammation, or any internal disease in a horse, independent of the pulse, state of his appetite, regularity of the functions of his viscera, and symptoms of pain exhibited. Depones, That a large growing on the lungs of a horse must necessarily affect his respiration. Depones, That inflammation may take place in the lungs of a horse, and his intestines be free of it, and appear to be clean and healthy, and he might die of that disease, without the bowels being affected. Depones, That a young horse is less apt to have tumours or growths on the intestines than an old one. Depones, That if he were called to prescribe for a horse labouring under disease in the bowels, such as cholic and grippings, he would consider it inefficient treatment to prescribe half an ounce of laudanum, and half an ounce of nitre, and to give the horse some clysters, taking only a small quantity of blood from him. Depones, That if next day he found the horse still getting worse, he would not have contented himself with taking two and a half Scotch pints of blood from him, but would have repeated the bleeding. Depones, That he considers laudanum a proper medicine for grippings, but that half an ounce is too small a quantity to be of any service, and that nitre is of no consequence, and that neither is at all calculated to act as a purgative. Depones, That difficulty of dunging is a common attendant of inflammation of the lungs, and gripping pains occasionally. Depones, That gripping pains and difficulty of dunging, are the most frequent symptoms of peritonæal inflammation. Depones, That inflammation in the bowels may

excite it in the kidneys, but it is not commonly the case. Depones, That there is danger in an ignorant or careless person raking a horse and giving clysters. Depones, That in all cases of inflammation of the bowels, the viscera become distended, and offer a greater or less obstruction to the hand per anum; which at the same time healthy intestines may do also by their natural contraction. Depones, That such a growing as has been described would be likely to produce grippings, and gripping produce inflammation. Depones, That in his opinion a growth upon the intestines or kidneys, as that described by Goudie and Wright, would only produce death by inflammation, which might or might not proceed to mortification. Interrogated for the pursuer, depones, There is a great difference between a growth or tumour occasioned by chronic inflammation and one caused by acute inflammation, in regard to the time in which it is produced, and its appearance when produced. Depones, That on inspection of the tumour, he should judge of the time in which it was produced from its size and structure. Depones, That if such tumours were about the size of a man's foot, and of the consistency of a cow's udder, he should consider it caused by chronic inflammation, and of considerable standing, though he could not specify the time. Depones, That he considers that a growth, such as described, extending downward, and interrupting the fæces, would account for partial obstruction and evident difficulty in the animal's dunging. Depones, That in the event of a horse dying from a tumour in the intestines, occasioned by acute inflammation, the bowels of the animal would exhibit symptoms of inflammation on dissection. Depones, That a tumour produced by chronic inflammation would not produce death by obstruction, without inflammation as the effect of that obstruction. Depones, That at the commencement, and during the progress of a growth in the intestines, occasioned by chronic inflammation, it is probable that the horse would be occasionally unwell. Depones, That he has seen growths or tumours, which, from their appearance, might have varied from a few days to a few months in coming to the state in which he found them. Re-interrogated for the defender, depones, That in case of the mesentery being swelled or thickened from the effects of inflammation, it would have the appearance of a yellow jelly or fatty like substance. Depones, That he now recollects the case of a mare, in which large bloody tumours, about the size of a person's fist, were found in the mesentery running along the spine, which had been produced by acute inflammation. The evidence of Charles Goudie, where he states that he had "made a thorough inspection of the cause of the death, and found the small guts growing to the back at

the kidneys, and the growth extending downwards, which growth stopped the mouth of the fundament"—having been read to the witness, he depones, That he has difficulty in understanding how a growth of the size described could have the effect of stopping the fundament, as, from the length of the mesentery at the posterior part of the intestines, a tumour of a foot in length would scarcely be sufficient to envelope it. Depones, That there is a portion of the small guts which arises at the posterior part of the stomach, and is continued backward about fifteen inches close to the spine. The description of the state of the horse by Goudie, having been read over to him,—depones, That in all his practice he has met with nothing analogous to it; and that had so much stress not been laid on the tumour near the kidneys, he would have been of opinion the horse had died of inflammation of the lungs; but from the symptoms not being stated prior to the death, he finds it impossible to come to a correct conclusion on the subject. All which is truth, &c.

Compeared William Henderson, veterinary surgeon in Edinburgh, who being solemnly sworn, &c. and interrogated, Depones (after hearing the facts, as stated in the pursuer's proof, read over to him, as contained in the evidences of Charles Goudie and Thomas Wright,) That the posterior portion of the intestines of a horse are connected to the spine by the mesentery. Does not recollect to have seen any case of diseased adhesion of the intestines to the mesentery; but that substance might become thickened or enlarged, either by chronic or acute inflammation. Depones, That a person who is in the practice of opening horses might be able to detect a derangement of that organ, and distinguish it from a growth. Depones, That adhesion can never take place without previous inflammation, which is the cause of it. Depones, That if upon dissection after death, a large growing should be found on the intestines of a horse, it is impossible for any one who had not seen the horse till within a day or two of its death, to say from inspection positively that the adhesion or disease had been upon him for any particular period, certainly not for six months, although from an examination of the tumours, they might come within a month or two of it, although he does not say positively they could do so. Depones, That in the whole of his practice, he never saw an instance of a diseased growing of the small guts to the back at the kidneys, nor does he believe it scarcely to be possible. Depones, That he never met with any case of such a growth or tumour as that described by Charles Goudie, as stopping the mouth of the anus; nor has he ever heard of such a one. Depones, That in every case where

there is the slightest disease of the lungs, there is always a derangement of the general health, and that a great growing upon the lungs would produce a very great and marked derangement of the general health. Depones, That a horse labouring under the disease of the lungs, as mentioned by Goudie, and such an obstruction of the bowels, could not possibly have a glossy coat, nor could he be playful and active at his work, and eat well till within a fortnight or three weeks of his death. Depones, That if a horse were hard worked in the month of November, till he was put into a profuse sweat, and had then a large quantity of cold water given to him, this would be extremely apt to produce inflammation of the lungs, kidneys, or bowels, but most probably of the latter. Depones, That a horse may be seized with inflammation, and adhesion might take place within two or three days, and a deposition of lymph to the extent of two tumblers may be made in the course of seven days. Depones, That change of diet, situation, and general management, is very often the cause of inflammation. Depones, That chronic inflammation of the lungs causes them to swell beyond their natural size. Depones, That it is impossible that any growth or tumour on the lungs can take place without previous inflammation. Depones, That inflammation cannot take place to such an extent as to produce tumour or growing on the lungs without its being apparent to any one at all acquainted with horses, that the animal was ill. Depones, That there is no way of ascertaining the existence of inflammation, or any internal disease in a horse, independent of the pulse, the eye, state of his appetite, regularity of his viscera, and symptoms of pain exhibited. Depones, That a large growing on the lungs of a horse must necessarily affect his respiration very much. Depones, That inflammation in the lungs of a horse may destroy the horse, and his bowels be not at all affected. Depones, That a young horse is much less apt to have growths or tumours in the intestines than an old one. Depones, That if he were called on to prescribe for a horse labouring under a disease in the bowels, such as cholic and grippings, he would not consider it very active treatment to prescribe half an ounce of laudanum, half an ounce of nitre, and to give the horse some clysters, taking only a small quantity of blood from him. Depones, That if next day he found the horse still getting worse, he would not have contented himself with taking two and a half Scotch pints of blood from him, but would have taken from seven to nine quarts, according to the size of the animal. Depones, That he considers laudanum a proper medicine for grippings, but that half an ounce is too small a quantity, the proper dose being from two to four ounces, repeated every hour and a

half. Depones, That nitre is never given by him in cases of spasmodic cholic, and that neither laudanum nor it are at all calculated to act as purgatives. Depones, That difficulty of dunging is a common attendant of inflammation of the lungs; but he does not recollect of having seen any case where it was attended with gripping pains. Depones, That gripping pains and difficulty of dunging are frequent symptoms of peritonæal inflammation. Depones, That inflammation in the bowels is apt to excite it in the kidneys. Depones, That there is great danger in an ignorant or careless person raking a horse, and giving clysters. Depones, That in all cases of the inflammation of the bowels, except that of the mucous membrane, the viscera become distended, and offer a greater or less obstruction to the hand per anum; and at the same time, healthy intestines do so also by their natural contraction. Depones, That if it were possible for such a tumour as that described by Goudie and Wright to grow in the abdomen, of which he is very sceptical, it could only produce death by inflammation. Depones, That in the case of the mesentery being swelled or thickened from the effects of chronic inflammation, it would have a yellowish appearance; but if it proceeded from acute or recent inflammation, it would have a dark red appearance. The evidence of Charles Goudie, where he states that he "had made a thorough inspection of the cause of the death, and found the small guts growing to the back at the kidneys, and the growth extending downwards, which growth stopped the mouth of the fundament," having been read to the witness, he depones, That a tumour pressing upon the rectum, might have the effect of impeding the fæces. Depones, That at the posterior part of the abdomen, he thinks the length of the mesentery is from eight to twelve inches, or thereabout. The description of the state of the horse by Goudie and Wright having been read over to him, and being interrogated If he can form any idea of the cause of its death? depones, That he conceives it must have died from intussusception, that is, one gut protruding into the other. Depones, That this disease is often produced by costiveness, violent exertion, or any sudden alteration of position. Depones, That he never saw a horse live more than two days under this disease, and he has known them die in twelve hours. Interrogated for the pursuer, depones, That the only tumours arising from chronic inflammation that he has seen, are small tumours about the size of a walnut, or an egg, suspended from the mesentery by a small string of organized lymph, and that these must have taken some time to form. Depones, That he judges of the length of time a growth or tumour has taken to form, from its size and consistency, but

particularly the latter. Depones, That if on opening a horse, he found a tumour of the consistency of a cow's udder, he should consider it of some standing, perhaps two months; thinks it might have been formed in a couple of months, or six weeks. Depones, that with such a tumour, the horse, if put to regular work, would be frequently indisposed, and would not be able to perform his work. Depones, that such a tumour might have the effect of impeding the fæces, and occasioning the horse evident difficulty in voiding his dung. Depones, that in the case of a horse dying of intussusception, the bowels would generally exhibit appearances of inflammation, but more particularly at the seat of the disease. Depones, That the state of the blood is not invariably to be depended upon as a symptom of inflammation, the blood of a healthy horse often having a buffy appearance, and that of a horse labouring under acute inflammation of the lungs, a red arterial colour. Depones, that before inflammation of the bowels could produce death, it must be pretty general, and not confined to one particular spot. All which is truth, &c.

Veterinary Affairs.

Several practitioners in the metropolis have lately been much annoyed by a combination among the journeymen farriers. These clubs, which have lately spread over the greater part of the kingdom, and pervaded every trade, although founded on an excellent principle, namely, to provide a fund for the support of worthy members in sickness and old age, have changed with the changing character of the times, and are now become instruments of far more mischief than good. They have, most of them, fallen under the control of those wild and restless spirits, whose aim seems to be to destroy all distinction of situation and rank; and, under the imposing name of the maintenance of just rights and liberties, to encroach upon and overthrow the rights of others, and render their masters their slaves. The journeymen farriers of the metropolis seem to be preparing to take their share in the work of insubordination and injustice to their employers. In addition to the fund which they raised for the support of the sick, and of those who were out of employment, they have lately adopted certain rules for their own government, which are exceedingly unjust and injurious towards their employers.

Our customers in town have long complained that the price of shoeing has not fallen with the price of every thing else; and

several of the proprietors of the larger forges had been consulting together, as to the extent to which they could comply with the public wish, for it was a general one. Among other things, they discussed the propriety of giving greater encouragement to men from the country, who were fully adequate to undertake a portion, at least, of the work of the forge, who would quickly prepare themselves for the execution of the whole, and who would gladly work for much lower wages than the town journeymen had been accustomed to demand.

The journeymen took the alarm; their clubs assembled, and they confirmed, by fines and penalties, many things which had been customary among them, but from which they had occasionally departed; and they drew up other regulations, bearing hard upon the interests of their employers. They determined that no fire-man should work for less than thirty-five shillings per week, and no doorman for less than thirty. That they would only make a certain number of shoes, of a certain description, in the course of the day; and that number was so small, that they could with the greatest ease get through their work by one o'clock. That they would only make a certain proportion of shoes from old iron to a certain number of new iron. That they would put on no shoes that were not made in the forge; and that they would not work with any man who did not belong to their clubs, and receive their wages; and all these things were to be enforced by heavy fines and penalties.

They proceeded at once to carry their resolutions into full execution. Deputies were sent to every forge, to announce to the men the determination of the club, and the consequences of disobedience; and it would seem that there was some private communication besides, for nothing was said to the master until the forge was fullest of horses, and then, in a body, they required the immediate dismissal of the man or men who did not belong to them; and if this was refused, as refused it naturally was in the great majority of cases, the club-men put on their coats, demanded their wages, and quitted the shop. Several persons were put to exceedingly great inconvenience by this; and to more than one the delay in shoeing the horses, or the impossibility of doing it at all, proved a very serious loss of after-custom.

It may be supposed, that tyranny like this would not be submitted to; and, after one or two preliminary meetings, a general one of the veterinary surgeons and master farriers was summoned.

This general meeting was held on Monday, the 15th of July, at the Garrick's Head, in Bow Street. Rather more than twenty persons were present. We were sorry to see so thin an assembly, and that so few of the leading men of the profession were there.

There seems to be a strange indifference among us as to what regards our professional interests. We had lamentable illustration of this a few years ago; and we regret that it continues to prevail, whatever may be the particular point at issue.

Those who were present, however, were unanimous. We have obtained a copy of the resolutions that were passed: they have our hearty concurrence, and while the purposes and plans of the association continue to be those which are expressed in these resolutions, it shall receive the warmest support which this Journal can give it.

At a Meeting of Veterinary Surgeons and Master Farriers, held at the Garrick's Head, Bow Street, Covent Garden, on Monday Evening, the 15th July,

It was resolved,

That the present meeting does form itself into "an Association to preserve the proper rights and interests of veterinary surgeons and master farriers against the unjust charges and encroachments of the journeymen."

That the Association shall meet on every Wednesday Evening, at eight o'clock, at the Garrick's Head, Bow Street.

That Mr. Moorey, of the Colonnade, be appointed Honorary Secretary to this Association.

That the Secretary shall summon an extra meeting of the Association at the written requisition of any three members.

That each member shall now contribute a sovereign towards the defrayment of the expenses of the Association.

That a candidate for admission into this Association must be proposed by one member and seconded by another, but shall not be admitted to any meeting until the above subscription of a sovereign shall have been paid.

The Association being thus formed, a letter from the Club House, Oxford Market, professing to be from the club of the journeymen, was read; but being anonymous, no notice could be taken of it.

It was then proposed and resolved,

That the journeymen farriers having determined that they will only work on certain exorbitant wages, and will not work with men who do not belong to their club, and receive the wages which they demand; and having also made certain unjust alterations in their manner of working, the members of this Association will resist every attempt of the journeymen to encroach on the rights and interests of the masters.

That no journeyman that has struck, or that shall strike against any member of this Association, with reference to these new encroachments, shall be employed by any other member of the Association, until he has made proper submission in the opinion of his late master; and this on pain of expulsion.

That, in order that the refractory journeymen may be known to the Association, each member shall regularly send to the Secretary the names of the men who strike against him, or whom he is compelled to discharge with reference to these encroachments; and the Secretary shall keep a record of the same in a book that shall lie on the table of the Association at all its meetings.

Y.

THE FIRST DISTRIBUTION OF UNIVERSITY PRIZES AND HONOURS TO VETERINARY STUDENTS.

On Monday, the 22d ultimo, the first public distribution of medals and certificates of merit, granted by a University to veterinary students, took place at the University of London. To him who had laboured for three long years to bring about this desired event, thus far to be enabled to vindicate the honour of the art he professed to teach—and, however humble might be the first exhibition, to stamp a new character on veterinary science, and to give new respectability to veterinary practitioners,—to him, I say, this was a gratifying day.

The weather was as bad as it could well be, and not more than eighty persons were present. The Dean of the Faculty of Medicine, Dr. A. T. Thomson, presided; and he was supported by Drs. Blair, Bostock, Carswell, Copland, Ferguson, and Ritchie, and Messrs. Andrews, Cocke, Key, Millington, Propert, Vigors, and White: several veterinary friends of the Lecturer were likewise there, among whom were Messrs. Field, King, Mavor, and others.

Dr. Thomson commenced the business of the day by a rapid but accurate and eloquent survey of the progress of veterinary science. He spoke of it in the olden time, when Hippocrates wrote on it, and practised it too; he referred to the later ages of the Roman empire, when the horse as well as his owner experienced the medical care of the physician. He spoke of its emerging from the darkness of the middle ages, when many strange epizootics were sweeping away the cattle in almost every part of Europe; and he traced it to the present day—doing full justice to its claims, as connected with the health of the brute, and affording many a happy illustration of the grand principles of physiology and the treatment of disease. He spoke of it as an art far too much undervalued; and he concluded by hinting at the pleasure he experienced at presiding at this first distribution of honours in the University of London.

Mr. Youatt, who had been brought from a sick bed, and who was carried thither again as soon as the ceremony was over, and who was little fitted to discharge the arduous duties of the day, then rose.

In his own name, and in the name of his class and his profession, he thanked the chairman for the justice he had done to an art, indeed "too much undervalued," and which required only room and scope enough in order to vindicate its claims to public estimation. A few exhibitions like that of to-day, a few acknowledgments like this from men ranking high in medical and general science, and veterinary practitioners would have this

room and scope, and shew themselves and their art to be not unworthy of regard.

He spoke of the difficulties, the partial opposition, which attended his first admission into the University—some arising from the prejudices of teachers, which it had since been his constant endeavour to disarm, but which had been better disarmed by the uniform good conduct of his classes, and the gradual development of the importance of the science he taught; and when the Dean of the Faculty of Medicine, the president of the joint faculties of the University, did him the honour to fill that chair on such an occasion, he was assured that these prejudices were dispelled, and that neither himself nor his class were quite despised in the University of London.

Was he then satisfied? So far as private ambition went, he would say that he was, and abundantly so; but when he regarded the importance of veterinary science, he must confess that he was not quite satisfied. It had not got that local habitation and name in this institution which it deserved: but he was too grateful for what was done for it to-day, farther to urge even a just claim; and he would only say, that when those new professorships were appointed to which the Dean of the Faculty of Arts alluded in the distribution of prizes to that branch of the school, one of the first of them would or should be, a Professorship of Agriculture, for no branch of science was more intimately connected with national prosperity—none with the interests and the happiness, and the character too, of a great proportion of their students in the after-period of life at least. They would soon find that they must give their Professor of Agriculture a coadjutor—a Professor of Veterinary Medicine. It would be useless for him to tell his pupils how they might most successfully breed the most valuable cattle, if he did not teach them how to preserve those cattle in health, or to relieve them from disease. Indeed, he could not effectually teach them the principles of breeding, for neither anatomically nor physiologically could he satisfactorily elucidate those points on which success in breeding mainly depended. Grateful, however, the lecturer said, for the kindness of that day, he was willing to wait; for the time must come when full justice would be done to the veterinary art.

When speaking of agriculture, however, he observed, that none but those who were intimately acquainted with the subject could believe how enormous was the annual loss sustained by the farmer, by the mortality which prevailed among their sheep and horned cattle. He would average it at thirteen millions of money—more than one-fourth of our annual taxation—and all fall-

ing on one class of society. Would the diffusion of veterinary knowledge lessen this to any material degree? He would unhesitatingly answer, Yes; for when veterinary instruction deviated from its original and native ground, and was confined or concentrated on the horse alone, we had opportunity to observe what good it could do with regard to that animal; and he would venture to assert, that where twenty horses died glandered before the introduction of veterinary knowledge, not one was now lost. There was not one-twelfth of the loss from pneumonia. Grease was, in a manner, banished from our stables; and that seeming epizootic, that horse-pest, staggers, that used to sweep away whole establishments, was now scarcely heard of, except in ill-regulated stables. He, therefore, concluded that it was fair to suppose, that had veterinary instruction extended, as it ought to have done, to all the legitimate objects of the veterinarian's care, it would have produced a somewhat similar benefit with regard to them all: but, at present, this extended instruction was too much withheld, and therefore many surgeons would not practice on cattle because they had not been taught the principles of cattle medicine. Others were endeavouring, after they had commenced their career, to make themselves acquainted with this shamefully-neglected division of veterinary science; but their learning was slowly acquired, and their employers put little confidence in them. No agricultural societies, south of the Tweed, had their appointed veterinary surgeon; and our profession and the interests of the public equally suffered.

The lecturer then went on to speak of this extended view of the veterinary art, as characteristic of the school of the University. He described this, among other things, as the object which he and a little knot of friends at first, and now, he might say, the profession generally, had been labouring to accomplish; and he gave a description, needless here to repeat, of the principles and feelings which had supported him, and would to the end of his career.

He next adverted to the aid which the veterinarian, when he had attained his proper grade in society, might render to the human physiologist. He spoke of the various works on physiology, and particularly of one by a gentleman then present, the best that he knew in any language; and he affirmed, even in the presence of that gentleman, that, as a science, physiology could be considered in few points securely based, and, he feared, in a great many more or less erroneously so;—and why? because the human surgeon had been either driven, or sometimes without justifiable motive had been led, to trace the secrets of nature by the dissection of living animals; and atrocities had been com-

mitted, and lengthened tortures inflicted, which found not a parallel in the cells of the inquisition; nay, some had even made it a matter of boast, that they had destroyed so many hundreds of living beings in the pursuit of their object.

When he first came to the University the physiological chair was filled by a gentleman with whose discoveries in physiology none can compete, in originality, practical importance, and certainty. How did he arrive at this certainty?—by cautious induction, by a few experiments, and these as few as might be, and as merciful as the object would by possibility admit: and when future ages spoke of Charles Bell as the first physiologist of his day, they would not forget to add, as still higher praise, that in the pursuit of science he forgot not the dictates of humanity.

And, after all, he asked, what dependance is to be placed on the result of experiments conducted by savages rather than men? Can any function be properly discharged under extremity of torture? Will nature work composedly, and in her usual manner, when she is outraged to a degree disgraceful to civilized society? Certainly not: and if we find that the slightest change in temperature, food, or situation, and especially that the slightest derangement and disease, will modify, change, subvert the function of every part, little dependance can be placed on the result of such experiments.

The human physiologist would, by and by, derive more extensive and surer aid from one who, having to attend on patients that could not speak, and on patients of very different species and conformation, was necessarily in the habit of close attention to the influence of every external and internal cause on the discharge of function; and who had at length acquired a kind of intuitive conception of all their bearings—this being his only, as well as his secure guide; whose observation had also extended over a wide field—the omnivorous hog, the carnivorous dog, the simply herbivorous rodentia, the horse with his double stomach, and the ruminant with his still more complicated digestive apparatus; who had been taught by observation and experience the different effect of the same agent on each of these, influenced by different organization, different function, and different destiny. This is the man who will, by and by, prove the most useful ally of the pathologist, and of the physiologist too.

After apologizing for the length of his address, for which the first appearance of himself and his class in such circumstances as the present might possibly be received as a partial excuse, he proceeded to say, that during the first half session his class had consisted of ten pupils, but during the second session it had increased to twenty; and that during the whole of the session he

had not once cause to complain of insubordination or idleness; but their uniform attention during the lecture, and their study afterwards, would, however, be best illustrated by the distribution of the prizes.

The ten composing the first class were alone entitled to contend for University honours; but he wished to offer to the rest tokens of his esteem, and incentives to continued diligence; and they had promised that they likewise would attend the examination: when, however, the hour arrived, only one of them was forthcoming, whether influenced by the becoming modesty of youth (yet that modesty could scarcely operate legitimately when it led to the violation of a promise), or other causes into which he would not disgrace himself by entering.

He received the pupils in the class-room, and distributed to each five written questions, taking care that they had access to no possible assistance. At the expiration of four hours he required their essays. On that day se'ennight they met again, and received five other questions relating to cattle: the first had reference to the horse. Each paper had then a motto appended to it by the author: the same motto was written on another piece of paper, folded, and containing the name of the writer, and enclosed in a little box, which was locked and the key sealed up.

On returning home the lecturer carefully perused all the papers, and made a record of his opinion of their relative value. He then sent them successively to some veterinary friends, who had on somewhat similar occasions examined the prize essays; and as a proof of the justice of such a method of examination, all, without mutual communication, agreed in precisely the same order of merit. The examination was, therefore, conducted by veterinary surgeons alone, by those who alone were competent to decide on the merits of the respective candidates. The lecturer was surrounded in this institution by human practitioners of the highest reputation and talent, who would have cheerfully given their opinion; but as he frankly told them (and to them he could not mean to give offence), it always appeared to him, to use the mildest term, to be the highest absurdity for medical men to determine on the competency of veterinary pupils.

Well, sir (the lecturer proceeded), we unanimously adjudged the medal, and the first certificate of merit, to the motto "honesty is the best policy," which the secretary and myself, for the first time opening the box a little while ago, found to belong to Mr. Clapp, son of an old established veterinary practitioner. It was thus awarded, not on account of any very extraordinary development of talent, but because he buckled to every question, gave a very fair answer to each, committed himself on none, and on some,

and particularly on influenza, did himself much credit, particularly by his clear and systematic development of the symptoms.

The medal and first certificate were then presented to Mr. Clapp by the President, who congratulated him on receiving the first medal conferred on a veterinary student in that institution; and he cautioned him not to relax from that habit of diligence which had procured for him that medal which, as being the first conferred on the class, he was sure Mr. Clapp would prize beyond all price. That medal he would often with pride exhibit to his friends; and he trusted that Mr. Clapp would feel the power of such a stimulus, and advance with more rapid steps in the path of improvement.

The second certificate of merit was adjudged to the motto. "Firm in every fortune." Mr. Youatt here observed, that when he was young, and, now and then amused a leisure hour by reading tales of chivalry, he always understood that the knight who placed a particular device or motto on his shield was bound to defend it to the death. Now, his young friend had not been quite faithful to his motto. His first course was well run; he unhorsed his antagonist, and one of no mean power; but then, either assured of victory, or quailing at the difficulty of the other achievements, he lost his vantage ground. There was nothing in the essays of the medalist comparable with this aspirant's essay on influenza; still the examiners assigned to him, on a comparison of the whole of the two days, the second certificate; but to which the lecturer, as a testimony of his sense of the talent evinced, and the hope, or rather the conviction, that, to this would hereafter be united the determination to do himself and his art justice, begged to add a copy of "The Horse." This successful candidate was Mr. Chapman, of Nottingham.

The chairman presented the certificate and the the book, assuring the candidate that he could not too highly estimate the kindness and the tact which the lecturer had displayed in the present of the book, and the hints by which it was accompanied. He, too, trusted, or rather was convinced, that Mr. Chapman would now proceed "firm in every fortune," until he obtained that eminence in his profession for which it appeared that he was so well qualified.

The lecturer next requested the chairman to do him the honour of presenting to Mr. Thomas, one of the students of the second session, the old series of THE VETERINARIAN, as a token of deep feeling of his kindness in presenting himself at the examination, and also as an acknowledgment of the sterling merit of his essays.

To Mr. Braby, of London, the lecturer also requested that a copy of "The Horse" might be presented. He was entitled to

contend for the University honours, but he had been unavoidably absent when Mr. Y. had lectured on most of the subjects contained in the second list (so also had the winner of the second certificate). He, too, had given in a very good set of papers on the questions in the first list. To him Mr. Y. was desirous of presenting a slight token of respect, and of gratitude too; for Mr. Braby had prepared some beautiful dissections for his lectures, and he had great pleasure in publicly acknowledging him to be, as a pupil, the first veterinary anatomist of his day.

These volumes were respectively presented, with very appropriate complimentary addresses from the chairman.

In concluding the business of the meeting, the Dean addressed himself to the pupils, and congratulated those who had received prizes, which he recommended them to regard not as marking any degree of merit upon which their future character could rest, without further and energetic exertions; but as merely indicating that they had successfully laid such a foundation for future application, as, if followed up, was certain to insure to them the confidence of their employers, and enable them to command success.

In paying a somewhat too high eulogy to the character of their teacher, the Dean took the opportunity of descanting upon the great advantage of preliminary general education; and recommended those young men who did not fortunately already possess it, to seize every opportunity of supplying the deficiency; and, as an illustration of its advantages, he had only to direct their attention to the literary labours of their teacher, as the result of those invaluable acquisitions which general education alone can bestow. He assured them that, whatever branch of art or of science may form the business of life, the desire to be first in that line was worthy of the best exertions of every man; and to stand thus preeminent in any branch was far more honourable than to fill a low station, even in those occupations which are generally regarded as the most worthy of ambition. "No retrospect in this world affords," said he, "such unalloyed gratification as that which displays every duty fulfilled; which admits the conviction to be cherished, that life has not been thrown away; that something has been added by us to the general stock of knowledge; and that, besides benefitting ourselves, we have contributed to advance the interests and the welfare of our fellow men. With such feelings as these, at the termination of a well-spent life, every man may look back with satisfaction on the path which he has trodden; and, if the world has not done justice to his merits, he will at least have the gratification of knowing that he has not failed for want of exertion."

Y.

Report of Diseases.

From May the 21st to July the 20th, inclusive.

HORSES.—Remaining under treatment 12
Apoplexy 1, broken knees 2, bruised sole 1, casualties serious 2, catarrh 5, colic spasmodic 1, contraction extreme 1, contusion with sloughing 1, cutaneous eruption 4, dysuria 1, fistulous withers 1, fracture of ilium 1, fracture of the spine 1, farcy 1, false quarter 1, fever 1, glanders 1, grease (bad) 1, hepatitis 1, hydrothorax 1, influenza 20, laminæ inflamed 1, laryngitis 1, lameness obscure 1, navicular disease 2, pleurisy 1, quittor 1, pumice 1, ringbone 2, rupture of the stomach 1, sandcrack 4, spavin 2, sprain (violent) 4, sitfast 2, stifle lameness 1, tetanus 1, tread 3, tumours 1, teeth morbid growth of, 1, vertigo 1, worms 2, wounds in the feet 2 84

96

DOGS.—Remaining under treatment 18
Abscess 4, asthma 11, ascites 2, bilious inflammation 1, bloody flux 1, cancer 1, canker in the ear 26, cataract 3, catarrh 3, compression of brain 1, constipation 5, contusion 1, coryza 1, deafness 1, diarrhœa 2, distemper 50, dysuria 1, epilepsy 7, enteritis 7, fractures 5, ditto os penis 1, feet diseases of 2, fever 2, hernia perineal 2, hæmorrhoids 1, mange 35, ditto acute 3, claws diseases of 4, nervous irritability 1, ophthalmia 8, paralysis 8, parturition 4, pediculi 1, pneumonia 1, poison 3, protrusion of eye 1, protrusion of rectum 1, rabies 3, rectum mechanical obstruction in 1, rheumatism 4, scalds 2, secretion (morbid) of milk 2, sprain 1, swallowing foreign bodies 1, stifle lameness 4, teeth diseases of 2, thyroid glands enlarged 2, tenesmus 1, tumours 4, ditto scirrhous 5, ditto in perinæo 1, vomition 1, wounds (serious) 5, worms 4 256

274

CATTLE.—Bronchitis 2, diarrhœa 1, dysentery 1, glossanthrax 1, parotitis 1, puerperal fever 2 8

378

The slightest glance at the above report, will shew the reader, that it contains several cases, connected with which there must have been circumstances worthy of record; but the resident editor is at present far too ill to give them form and substance. They shall not, however, be ultimately forgotten.

June and July have passed without a single case of rabies. Y.

Miscellanea.

THE HORNED HORSE.

IN Scotland, the male servant of a country clergyman, known by the name of "the minister's man," used to be a person of some importance. One of these having rather an economical

mistress, who grudged particularly the expense of candle-light, John contrived at least to make his master sensible of the inconvenience of darkness. It happened one night that the minister being sent for in a hurry by one of his parishioners who was taken ill, John thought proper to saddle the cow instead of the horse. After proceeding a little way, the minister turned back, and called out rather angrily, that the horse had got horns. "If there has been a mistake made," answered John, "the mistress must be responsible, as she chooses to send me to the stable always in the dark."

TO CORRESPONDENTS.

We have received a third letter, we shrewdly suspect written by the same person, although the signature is varied, and the postage of neither of which was paid, inquiring, and in a somewhat peremptory tone, why Mr. Vines's papers on the absorbents are not continued. We beg to refer the writer or writers to Mr. Vines. By the bye, this practice of sending letters (two-penny post letters chiefly), without paying the postage, is becoming a little too frequent, and we entreat that it may be discontinued, especially when many of them are evidently written for the purpose of annoyance. Most of these letters have a northern or north-eastern postmark upon them. These things, however, annoy not us, but they disgrace the parties. Dr. Abel relates that, when a Newfoundland dog left his master's house, he was often assailed by a number of little noisy dogs in the street. He usually passed them with apparent unconcern, as if they were beneath his notice; but one cur was particularly troublesome, and at length carried his impudence so far as to bite the Newfoundland dog in the leg. This was a degree of wanton insult beyond what he could patiently endure; and he instantly turned round, and seized the offender, and carried him to the river side, and dropped him into the water; and when the little rascal was well ducked, and well frightened, and beginning to sink, he plunged in and brought him safe to land. Now, two or three of these curs, kinds of ringleaders in mischief, louder yelpers than the rest, have lately carried *their* impudence so far as to attempt to bite. Lord bless them! their tiny teeth could not penetrate our skin; but if they should try it again, and pinch a little too hard, why we will seize them by the nape of the neck, where we shall not hurt them too much, and hold them up to the terror of their companions, and the loud laugh of every stander-by: and after having given them a good hearty shake or two, yet breaking no bones—we would not seriously injure such poor little souls for the world—they shall crawl away in all their native insignificance.

The annual dinner of the Veterinary Club will be held at the King's Arms Tavern, Bridge Street, Westminster, on Thursday, the 12th of September; and the Club would be most happy to see any of their country friends. We give this lengthened notice, that our friends may have more time to make their arrangements, and also to remind some of them of their promises, and with the fulfilment of which there are certain persons who associate the expectation of much pleasure.

Will Messrs. Caxton, Lewis, and Stewart inform us how we shall convey to them their certificates of merit for the last year.

THE

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

The bones of the cranium in most of our domesticated animals having been described at pp. 191 and 265 of the fourth volume of THE VETERINARIAN, we proceed to

LECTURE XXXV.

The Membranes of the Brain—The Size, Form, and Composition of the Brain—The Functions of the Cineritious and Medullary Portions, and the Intellectual Principle in Animals.

The Dura Mater in the Horse.—On endeavouring to raise the roof of the skull in any of our patients, we find, adhering to the inner surface of the bone, and separated from it with difficulty, a dense and strong membrane, the *dura mater,* at once the internal periosteum of the bone, and the covering of the brain. It adheres to the bone by innumerable prolongations of its substance, and by minute vessels; and these are most plentiful along the sutures, and the ridges of the bones. If I macerate either of the bones composing the cranium in diluted muriatic acid, the earthy matter will be dissolved, and I shall have remaining the outer and the inner membrane—the pericranium and the internal periosteum—with a great deal of interposed cellular tissue, and numerous vessels of communication.

Nature of the Membrane.—This adhesion to the bone gives to the dura mater a roughened surface exteriorly, while it presents a polished, glistening face to the membranes below; thereby obviating injurious friction between them. The dura mater is united to the membranes beneath by many little cords or prolongations of its substance, and these chiefly following the direction of the sinuses. Each of these little cords or doublings of the membrane carries a small bloodvessel, and penetrates through the other membranes, and enters into the substance of the brain, and is firmly tied down wherever it enters, thus answering the double purposes of carrying blood, and giving support to

the brain or its membranes, and particularly in the direction of the great divisions or sinuses. This membrane consists of many laminæ, and it is lacerated with much difficulty.

The manner in which it covers the Brain.—The dura mater completely envelops the brain, but does not enter into any of its sinuosities or cavities ; it accompanies the optic nerve out of the cranium ; and a prolongation of it, but singularly modified, as I shall have hereafter to describe, and no longer adhering to the bone, passes through the foramen magnum, and encloses the spinal marrow through its whole extent.

The Longitudinal Sinus.—The dura mater dips deep into the scissure between the lobes of the brain, and that in a very curious manner. When it arrives at the central scissure on either side, it splits into two laminæ, or collections of laminæ. One of them passes over the scissure, and binds the lobes together ; the other runs deeply into it on one side, lining, as it were, the lobe on that side, and then being suddenly inflected or turned at the bottom of the scissure, it climbs up the other side of the sulcus to reach the external transverse portion, and thus forms a triangular cavity—the longitudinal sinus—the reservoir of the superficial venous blood of the brain, as will be hereafter more fully explained.

The Falx.—These laminæ approximate to each other as they descend between the lobes forming the apex of this inverted triangle ; and at length uniting, pierce yet more deeply, under the denomination of the falx in the human being ; but from the flatness of the brain of the quadruped it is much less developed, and scarcely deserves the name of a falx or scythe. A similar division and prolongation of this membrane is observable at the tentorium, dipping down beneath the bony part in the form of an irregular but narrow fringe. This duplicature of the dura mater is particularly extended in some animals that have not a bony tentorium. See this cranial cavity of the sheep, how perfectly it is partitioned into distinct chambers by these membranous curtains. In some quadrupeds, however, the falciform process of the cerebellum is altogether wanting.

The manner in which the proper falx and the tentorium meet each other at right angles, and the support they give to each other, and the method by which both are rendered tense and effective, are worthy of observation. The lateral sinuses are likewise constructed of the laminæ of the tentorium ; and the sphenoidal and cavernous sinuses are formed from the splitting of the dura mater.

The Dura Mater in other Domesticated Animals.—I do not know of any considerable difference of structure in this mem-

brane in our other patients, except that the cavernous sinuses are more extensive in the ox, and that they likewise contain a kind of arterial resorvoir derived from the carotids.

The Arachnoid Membrane.—Beneath the dura mater, and separated from it by a small portion of fluid, or at least of moisture on the surface of the membranes, is the *arachnoid tunic,* so called from being as fine as a spider's web. It likewise envelops the brain. It is said to float loose between the dura mater and the pia mater, but it is tied down by those cords and vessels from the dura mater which penetrate through it in order to reach the brain; and at these points of union, where we are occasionally enabled to make a happy dissection, we find a portion of cellular substance of almost inconceivable delicacy surrounding the cord, and giving some strength to the attachment of so fragile a membrane. The arachnoid tunic is most easily demonstrated at the base of the brain superiorly to the origins of the optic nerves. Of its use I cannot confidently speak; it may either be a secreting membrane to supply the fluid interposed between the meninges of the brain, or it may be destined in some measure to cut off the communication between the brain and the dura mater, and to prevent its too much sympathizing with any inflammation or injury of the membranes of the cranium.

It does not appear that either the dura mater or the arachnoid membrane is endued with sensibility; and in none of our patients have we proof of that inflammation of the tunica arachnoidea of which medical men have spoken.

The Pia Mater.—Beneath these is the proper investing membrane of the brain—the *pia mater*—and which not only covers its external surface, but penetrates into every sulcus, lines every ventricle, and clothes every irregularity and portion and part of the brain. So far as we can judge of it by maceration, it is composed of delicate but condensed cellular tissue; and, like the cellular tissue generally, it penetrates everywhere, being the vehicle by means of which the bloodvessels and the absorbents are conveyed, by which strength is given to every part, and by which they are at once divided and united. The external surface of the pia mater is smooth and polished; the internal surface cannot be demonstrated; it may occasionally be torn off, but it cannot be dissected; it is, however, necessarily roughened by the multitude of vessels which it conveys into the substance of the brain. Both the pia mater and the arachnoid membrane are prolonged through the whole extent of the spinal cavity.

The Bulk of the Brain.—We now arrive at the brain itself; and the first thing which strikes us is its comparatively diminutive size in our domesticated animals. Look at this brain of the

human being, how broad, and rounded, and bulky, compared with the elongated flat one of the horse and the ox. The human brain is double the size of that of the horse, and, compared with the bulk of the animal, it is many times the size. Comparative anatomists have given us a kind of table of the proportionate weight of the brain. In the human being it has been calculated at $\frac{1}{85}$th part of the weight of the frame; in the dog, according to his size, it varies from $\frac{1}{40}$th to $\frac{1}{360}$th part; in the horse it is $\frac{1}{450}$th; in the swine $\frac{1}{500}$th; in the sheep $\frac{1}{750}$th (Carus strangely says $\frac{1}{85}$th); and in the ox $\frac{1}{800}$th. Do we trace any connexion between this relative bulk of brain and the quantum of mind? We seem to have been classing our patients pretty nearly in proportion to their degree of intelligence. But we are not yet prepared for this.

Form of the Brain.—The flatness of the brain of quadrupeds, compared with the rotundity of the human brain, is one of the first things that will naturally attract our attention; and the flatness, when we turn the brain over, is far more remarkable below than above. The convexity of the middle lobes is strangely diminished, while the posterior lobe is in a manner lost. These circumstances, and particularly the last of them, account for the great difference in the base of the cranium in the human being and the quadruped,—the deep concavities of the one, and the comparative flatness and regularity of the other. Observe the prolonged oval shape of the brain in the horse, the ox, and sheep; somewhat broader, indeed, posteriorly than anteriorly, and this assuming almost the form of a triangle in the dog.

Irregularities of Surface.—We recognize an irregularity of surface, as on the human brain—certain prominences and depressions, but not so marked. The surface of the brain in the quadruped is comparatively tame and inexpressive; nay, some of our occasional patients have no convolutions on the surface of the brain; they are not found in the hare, the rabbit, the rodentia generally, or the bird. They are not so bold or so deep in the ox as in the horse, nor so much so, compared with the difference of bulk, in the horse as in the dog,—the swine holding an intermediate place between the two. We must not dare to connect this with the proportion of animal food by which each is nourished, although, in proportion as he is carnivorous, his brain is usually convoluted; but I am afraid that we do not know enough of the functions of any part of the brain of the quadruped to associate these convolutions with anything else.

Some comparative anatomists, whose descriptions are generally distinguished for their accuracy, have told us, that "in the opposite hemispheres of the cerebrum in animals, the most exact

correspondence may be traced between the dispositions of the convolutions in both." This is erroneous: compare together the hemispheres of these brains, and tell me whether you can find in either of them this "most exact correspondence." I am bound to confess, that after having been, in former years, a craniologist, my faith began to be shaken, and was at length overturned, by rarely finding even "the general resemblance" that exists in the human brain, and certainly "no correspondence between the convolutions and the superficial structure of the skull," and no possibility of discovering it in the living animal, if such correspondence had existed.

The Division of the Brain.—The contents of the cranial cavity are divided in pretty nearly the same manner in all quadrupeds. There is the *cerebrum* and the *cerebellum*, the former divided into two lobes, and the latter into three, or rather into two, united by a belt. There is considerable difference, however, in the relative size of the cerebrum and cerebellum. In the human being the cerebellum is about one-ninth of the bulk of the brain; in the ox it bears the same proportion; in the dog it is one-eighth; in the horse one-seventh; and in the sheep one-fifth: this, however, depends upon the age, for it is only in the adult animal that the cerebellum is fully developed. We have not yet inquired into the functions of these two portions of the brain; and when we do, I fear that we shall not be able satisfactorily to account for this difference of bulk.

The relative situation of the cerebrum and cerebellum present, as I stated in my last lecture, only an apparent difference. In the quadruped the cerebellum is posterior and even superior to the cerebrum; in the human being it is inferior; but this depends upon the manner in which the head is connected with the atlas. In both the cerebellum is the portion nearest to the foramen magnum, and under which the crura cerebri must pass to arrive at the medulla oblongata and spinal chord.

The Difference in the Composition of the Brain.—If I cut into the brain, I find it composed of two substances very unlike in their appearance. The one from its situation on the outside of the brain is called the *cortical*, and from its reddish *ashen* colour, the *cineritious* substance; the other, from its pulpy nature, and found deeper in the brain, is termed the *medullary* substance. Long hardening in alcohol has proved them both to be of a fibrous structure, and has confirmed the old opinion, that they are essentially distinct from each other, as well as of very different composition. Placed in apposition with each other, and seemingly mingling, they never change by degrees into one another, or run, as it were, into the same mass

The fibres of the cineritious portion run in various ways: on the surface of the brain they are vertical,—deep within the brain, they take every possible direction. While they are unconnected with the medullary substance, they are in a manner isolated among each other. The medullary fibres are connected throughout the brain. They have all a direct or indirect tendency towards the centre and base of the brain; and from their common centre, or condensation of substance and influence and power, the nerves derive their origin. The nerves seem to be prolongations of the medullary substance. The cineritious portion is scattered every where; chiefly distributed towards the outside of the brain, but found also deep in its ceatre; and striæ, or portions of it, at the root of every nerve. The medulla oblongata and the spinal chord are evident prolongations of it.

The Proportions of Medullary and Cineritious Portions in different Animals.—The facts that I have just stated lead to the most interesting inquiry in which the physiologist can be engaged, viz. a comparison between the brains of various animals—the proportions of these two substances in each, and the character and destiny of the different animals; and the conclusion drawn from such an inquiry will be arrived at without difficulty, and will be perfectly satisfactory. Compare together these brains—that of the human being, the horse, and the ox. Observe, in the first place, the development, greater beyond comparison, of the nerves of sense in the brains of the inferior animals; compare the olfactory nerve in the human being and the quadruped, (I must maintain that it is a perfect nerve, although our best comparative anatomists have degraded it into a mere mammillary process); that belonging to the human brain is not one-fourth the size of the same nerve in the horse, nor a sixth part so large as that in the ox. Compare the optic nerve in the biped and the quadruped, the size of the tractus and the bulk of the nerve itself—the auditory nerve affords as satisfactory a point of comparison. Examine that which I have described as the common centre of the medullary substance or influence; that which gives origin to every cerebral nerve of sensation and of motion; first, the crura cerebri, mere chords in the human being, compared with the broad and bulky pillars of the quadruped. Observe the medulla oblongata, the centre or the condensation of the medullary matter of the cerebellum as well as the cerebrum—the origin or commencement of the spinal chord—connected with loco-motion, with strength and common sensibility—connected too, as we shall hereafter see, with the powers of organic as well as animal life. How striking is the difference!—the breadth of the medulla oblongata in the human being is

but one-seventh part of that of the brain; in the horse and ox it is nearly a third; in the dog it is more than a half; in the hog it is more than two-thirds. Notwithstanding this disproportionate bulk of medullary matter, the brain of the horse, the ox, the swine, and the dog, is comparatively less, much less than that of the human being. The brain of the dog is scarcely a fourth part of the proportionate weight of the human being; the brain of the ox is not a twentieth part. Then how is this difference made up? Why, in the cortical or cineritious parts: that preponderates as much in the human brain as the medullary substance does in the brain of the quadruped.

The Functions of the Medullary and Cineritious Parts in the Human Being and the Quadruped.—Now then, gentlemen, a little light begins to break in upon us. In the quadruped the medullary portion preponderates; in the human being, the cineritious. In the former, the senses are acute and the muscular power is great; in the other, there is or ought to be a stronger mental principle. The hunter will recognize the cry of the hounds, and his ears will be erect, and he will be all spirit and impatience, long before his rider is conscious of the least sound. We soon find in the exercise of our profession, that when all is dark and black around us, we can trust to the keener vision of our horse, who, if we resign ourselves to his guidance, will carry us safely through the intricacies and dangers of the road; and we must have carelessly observed him, if we have not been taught that the sense of smell supplies in him the place of the sense of touch and the lessons of experience. To this it must be added, that in power or quickness of muscular action, according to the kind of service that we require, he is all that we could wish. In the human being, the senses are comparatively dull and obtuse: neither in hearing, sight, or smell, can we vie with the meanest brute; but we have the power of thought to arrange and to compare the intimations which our senses afford us; to extract from them all that is necessary for our existence and comfort; to combine with the impressions that we receive from them many an association which renders them productive of intense delight; and, best and noblest of all, to make them the foundation of intellectual improvement and moral worth.

Comparison between the Cineritious and Medullary Substance in different Quadrupeds.—Observe these brains—that of the horse and that of the ox. The brain of the horse is considerably the larger of the two: its relative weight is nearly double. How is this difference made up? In some parts of the base of the brain there is more medullary substance in the ox than in the horse: the medulla oblongata is considerably larger;

the additional bulk of brain in the horse is composed of cineritious matter. Observe again these brains—that of the dog and of the sheep. The dog was not half the size of the sheep, and yet his brain is larger, although, if we examine the base of both, there is proportionally more medullary matter in the sheep than in the dog. Here again the additional bulk of brain is composed of cineritious substance. How different is the character of these animals! the sluggish stupid ox, and the intelligent horse; the silly sheep, and the intellectual companionable dog. I must not use decided language on such a subject; but the connexion between the cineritious part of the brain, and the intellectual principle, and that between the medullary portion and the mere animal principle, does seem, at least, highly probable. The latter is the medium through which the impression is conveyed, or the motion is effected: the former is the substance to which that impression is referred; where it is received, registered, and compared; and by which the operation of the motor nerves is influenced and governed: the one is providing materials to work upon, often rude and useless beyond the present moment—the latter is surveying and arranging them, and building up the fabric of intellectual and moral worth.

The Preponderance of Animal Power in Brutes.—The substances of which the brain is composed are the same in all our patients, and in every vertebrated animal. They differ only in the mode of arrangement, and in their relative quantities. It is what we should expect, after experience has taught us that the difference between the human being and the brute, in intellectual and in moral worth, consists in degree and not in kind. The animal portion of the brain preponderates in each: and in each with beautiful adaptation to the situation in which he is placed, and his connexion with man. Look once more at the olfactory nerve, bearing in development an invariable proportion to the necessity for acute scent, not only for the purposes of the animal individually, but of man. Observe this nerve in the horse, how large compared with that of the human being; larger in the ox, who is not so much domesticated, and oftener sent into the field to shift for himself; larger still in the swine, who is to search for a portion of his food buried under the soil, and immersed deeply in refuse and filth; and largest of all in the dog, the acuteness of whose scent is so much connected with our pleasures. As we advance in our subject, the organic nerves will pass in review before us, and there we shall observe the same comparative difference, both in those of the spine, and the deeper-seated ganglia—the motor, and the secretory or chemical organic nerves: the worth of the horse depends upon his wind, and that of the ox on his disposition to fatten.

The Diminution, yet existence, of Intellectual Power in the Brute.—Then this *cortical* part—once more observe it, compare it. Forgive a little repetition here. How different its relative quantity, whether compared with the human brain, or those of various animals! Once more observe it in the dog, the horse, the sheep, the ox—comparatively small in each—diminishing in each according to the evident proportion of intelligence. Small, we say, in each; for in their wild state the brutes have no concern, and no idea beyond their food and reproduction: in their domesticated state they are destined to be the servants of man. The acuteness of their senses, the preponderance of the animal power, qualify them for this service; but were proportionate intellectual capacity added to this—were they made conscious of their strength, they would burst their bonds, and man would in his turn be the victim and the slave. Still, however, the cortical part is found in each; prevailing in each as it would seem to be needed for our purpose that intelligence should be added to animal power. In each the organization, the connexions, appear to be the same; and the distinction in the intellectual—ay, and even the moral qualities in the biped and the quadruped, is in degree and not in kind—nay, it may so happen, that the one being advanced and improved by circumstances, and the other retarded or contaminated, there may be more difference between the cultivated and good man, and the savage and depraved one, than between the biped and the brute.

Conclusion.—If we had time, I might trace in our patients the palpable existence of every mental faculty—attention, memory, association, imagination, judgment; and I might trace too, shall I say the germ, no, the full development of many a virtue—parental, filial, social affection—courage, fidelity, gratitude, disinterestedness, and a consciousness of right and wrong. This would be a pleasing relief to our severer inquiries into anatomy and disease: it would reconcile us to our profession—it would teach us to admire and to love those whose medical guardians and friends we had undertaken to be—it would give that impelling principle, that aim and object, which would ensure our professional success. To this subject let your attention be often directed; every day will afford you pleasing illustration of it, and the result will be, that your professional fame will be established on the only sure basis—science and humanity.

CASE OF RUPTURE OF A PORTION OF THE COLON.

By Mr. Dickens, *V. S., Kimbolton.*

April 30*th*, 1832.—I was called to see an aged cart horse, the property of a respectable farmer in this neighbourhood, that had, from his account, been griped at intervals for two days previously. I found him very uneasy, continually up and down, pulse 60, legs cold, and the fæces completely incased in mucus: I therefore began to treat it as a disease of the mucous coat of the intestine, ordering gruel three times per day, and administering ol. lini, ℔iss. VS. ℔vj.

May 1*st.*—More easy, but bowels not moved. ℞. hyd. submur. ʒj: continue the gruel and enemas.

May 2*d.*—Seems in great pain, constantly up and down. The medicine not acting, give ol. lini, ℔iss, and enemata. On passing my hand up the rectum, which I was induced to do from the clysters coming away almost colourless, I found it was completely empty, with the exception of a nasty glairy mucus; I therefore concluded that some serious obstruction had taken place in a higher portion of the intestinal canal.

May 3*d.*—Much as yesterday. Continue oil and gruel.

May 4*th.*—Much the same, except that the abdomen has become much distended; and nothing having passed per rectum, I now anticipated the result, and recommended the owner to turn him out into a grass close, and leave him to nature (thinking it possible that change of food might effect a change), where he remained eating the greater part of the day, and constantly straining behind, but without effect. He continued in that state until the next day, when he died.

Post-mortem.—On opening the abdomen, a large rupture presented itself in the most capacious part of the colon, sufficiently large to introduce the hand, and through which had protruded, at least, half a bushel of fæcal matter: the intestines anterior to the diseased part were distended, and the remaining portion of the colon and rectum completely empty. The other organs were healthy, except the liver, which was of a light clay colour.

A CASE OF GASTRITIS, ATTENDED WITH RUPTURE OF THE CÆCUM.

By the same.

Dec. 29, 1832.—About eight in the morning my attendance was requested upon a bay hackney, 4 years old, the property of

a gentleman in this place, which had been, to all appearance, well on the previous night. Arriving at the stable, I found him lying down, with an appearance of stupor, not seeming in the least to recognize surrounding objects: pulse 40, and oppressed; mouth hot; the buccal and conjunctival membranes of a deep yellow tinge; great suffusion of tears; extremities cold, and is with great difficulty made to rise.

Treatment.—Abstract ℔x of blood; aloe Barb. in solut. ʒv. Apply stimulating liniment to legs, and bandage.

Five P.M.—Is much worse. Pulse 65, extremities colder, mouth clammy, great rigor: soda sulph. ℔j in solution, and an oleaginous enema, which was retained a considerable time, and then rejected, but free from fæcal matter.

Twelve P.M.—Appears beyond all hope of recovery; and I was informed early next morning of his death.

Post-mortem.—On examining the stomach, the primary seat of the disease was plainly indicated, it displaying strong marks of inflammation, the whole of the villous coat being of a bright crimson hue, and containing a considerable quantity of soft food, but insufficient to produce distention of that organ. The small intestines were healthly, with the exception of a slight blush; but on proceeding to the cæcum, we found a rupture or laceration, about nine inches from the apex and about two inches in length, through which had escaped a quantity of half-digested food; and on enlarging which, and bringing the inside of the gut to view, it presented, for some distance around, considerable marks of inflammation. The colon and rectum were quite healthy (the former containing a small quantity of fæcal matter); as were the thoracic viscera and kidneys, the liver presenting marks of disease.

Remarks.—Upon the above case I am induced to offer a few speculative ideas; viz., that the gastric affection must have been coming on for some days, although not noticed except by the owner, who informed me that he found him falter and go weak under him when riding, two days prior to his death. That it was probably produced by his having had indifferent hay for some time previous, thereby weakening the powers of that organ to such an extent as to render it unable to perform its proper function on the contents therein, from which they passed into the intestines in a state calling upon them to perform, in part, the duty of the stomach. But how came it that the small ones were so little affected? I was at first almost at a loss to explain; but I find that some of our best veterinary writers are at issue as to the use of the cæcum, Mr. Percivall stating, what I believe to be the general opinion, and what I admit I have generally found

to be the case, viz., that the contents of this gut after death are fluid; but Mr. Blaine attaches far greater import to it; he says, second edition, p. 229, "Upon the slightest inspection there appears a great peculiarity in the formation of the cæcum in the horse; and on a more attentive view we are struck with its evident importance in this animal, and are led to consider it as little less than a second stomach, and which, in fact, is the case; for the food, or more properly the macerated mass of the small intestines, mixed with the biliary and pancreatic juices, here undergoes some further change; and for this purpose the cæcum has clearly a structure favourable to its detention within it, and to the circulation of this mass throughout all its parts."

Does not the present case go far to corroborate the view taken by Mr. Blaine, in attaching so much importance to this portion of the digestive apparatus?—I think it clearly shews that the mischief was occasioned in endeavouring to accomplish that which the stomach in its excited state was incapable of performing.

OBSERVATIONS ON MR. HARRISON'S PAPER "ON THE USE AND ABUSE OF PURGATIVES IN THE DISEASES OF CATTLE," AND ON THE EFFECTS OF PURGATIVES ON THE TWO FIRST STOMACHS OF CATTLE.

By Mr. Friend, *V.S., Walsall.*

I did intend in the July number to offer you a few remarks on two papers which appeared in The Veterinarian for May, on diseases of the digestive viscera of cattle; but a severe domestic calamity prevented me from turning my attention to the subject then; and it is only because I felt roused by the perusal of an article in the last Veterinarian on "Use and abuse of strong Purgatives in the Diseases of Cattle," that I venture the following observations:—

It has always appeared to me that our treatment of ruminant animals for internal disease can alone be successful when it is based on a thorough acquaintance with the physiology of their digestive organs, and of that complicated portion of them, the four stomachs, more particularly.

In The Veterinarian for April, I made some observations on these viscera in ruminants, not generally understood or admitted; and as it is cheering to find, after having stepped out of the old and well-worn track, that though we may have altered our route, yet that we have not missed of the object aimed at, so, I assure you, I felt pleased when I saw the two cases in The

VETERINARIAN for May, by a veterinary practitioner, corroborative (as I hope to prove) of the peculiar doctrines I then advanced; and this self-gratulation was in no way weakened when I read the paper, I have before mentioned, in the August number, by Mr. Harrison; written with a spirit of candour, and attention to the interests of veterinary science generally, that I admire; and with a self-confidence in his own attention and researches which is highly creditable to him, and without which every professional man will be weak and wavering in his conclusions. And while I admit that the same painful failure has attended my endeavours in different cases, under similar treatment to those so well described in his own, he will, I am sure, excuse me, that I have come to different conclusions from himself, and that, with an equal view to the benefit of the profession generally, I make the freest use of his remarks.

I take it for granted, it will be admitted that, in all post-mortem examinations, our attention ought equally to be directed to the cause producing, as to the effect produced; and that it is quite as necessary to find out the origin, as it is to ascertain the extent of the lesions presenting themselves. Pursuing this principle, I proceed to the two cases in THE VETERINARIAN for May; and I have no hesitation in saying, that though the immediate cause of death might be inflammation of the mucous membrane of the intestines, yet that the primary and predisposing cause was disease of the first two stomachs: and this belief I conceive to be fully borne out as well by the symptoms and progress of the disease, as by the post-mortem appearances. A veterinary practitioner informs us, that in the first case, when he saw the bullock, the discharge per anum consisted only of yellow liquid mucus; that the cordial-tonic medicines which he administered produced no particular effect, and that he died on the eighth day. The second case varies but little in the progress of the disease, and in both a post-mortem examination exhibited the *first two stomachs and manyplus full.* He has not mentioned the nature and quantity of the purgatives employed in the second case, though the effect, or rather want of effect, is apparent enough.

I have long been convinced that a much greater attention to the first two stomachs of ruminant animals than has been generally paid to them is essentially necessary. It has been a generally received opinion, that medicine given to cattle in a fluid form (and which form, in fact, constitutes the general one) does not enter the rumen at all, but passes through the manyplus, and at once enters the abomasum or true stomach: this opinion I combatted in an article in THE VETERINARIAN for April, and I believe it is generally admitted that I was correct in my theory.

It remains now therefore to be proved, that any advantage is to be gained by taking such a view of the economy and uses of the four stomachs as I then exhibited. I conceive there is much. It has taught me, at any rate, to look with a very different eye in all post-mortem examinations than I used to do before I satisfied myself of the intimate connection generally subsisting between disease of the rumen, reticulum, and manyplus, and derangement of the rest of the abdominal viscera; and I believe that more mistakes have arisen in these examinations, from want of attention to the peculiar uses of these stomachs, than from any other cause.

Is it not surprising, for instance, that when after seven or eight days (as in the two cases cited above), during all which time nature had, by the most violent efforts, evidently been desirous to get rid of something that oppressed and was destroying her, a post-mortem examination exhibits these stomachs full, and no remark is made upon the unnatural circumstance? Is it not surprising that the exclamation is not immediately made?—Here is the secret! this is the load which nature has been labouring, and labouring even unto death, to remove! I am convinced that in both these cases, if the rumen and reticulum had been effectually relieved in the first instance, that if recovery had not been certain, yet the chances of it would have been infinitely greater. I conceive there was no greater derangement of the abdominal viscera than might have been reasonably expected, after so long a time suffering under the double evil of highly increased exertion, and unnatural excitation; and the total want of the natural stimulus which the food contained in the first three stomachs ought to have afforded.

These two cases are by no means solitary instances of this carelessness, in overlooking such an extraordinary fact, as that of a stomach or stomachs not having been at all emptied of their contents after seven or eight days' purging. If you will glance your eye over any of these accounts, you will generally find it recorded as carelessly, as if it were not at all unnatural; or rather even as if it were a proof of health that *the paunches were full*, and this after an abstinence of several days.

How is this to be accounted for? First, from the erroneous opinion already alluded to, of considering them as not immediately under the controul of medicine; and, secondly, the difficulty of detecting disease in them, further than finding they have ceased to act, and still retain the contents they ought to have parted with, in the common course of things, some time before. I say there is a difficulty, without a minute examination, of detecting disease in the rumen and reticulum. There is not

that vascularity in them that there is in the intestines; and frequently, so far as colour is concerned, they will appear quite healthy. You will sometimes find on these occasions that the lining membrane of the stomachs is very easily separable, as if by long maceration, and there is generally a flabbiness and want of that muscular firmness which appears in health; but, as I before said, the proofs of disease are not so very obvious but that they may escape detection from a casual observation only.

With regard to the article in THE VETERINARIAN for August, by Mr. H., it will be readily seen, that he has therein offered some observations on the diseases and treatment of cattle, differing materially from some previously inserted in THE VETERINARIAN by myself; and as we both offer our remarks as the result of practical experience, it becomes of consequence to ascertain by what means conclusions so opposite have been arrived at from the observation of cases characterized by the same symptoms, attended with the same failure in treatment, and exhibiting the same post-mortem appearances.

He has in his preliminary remarks taken up a shield—the motto, Caution. But he must recollect that, if a practitioner would succeed, he must ever blend promptness with caution, and vigour and decision with carefulness. I have said in a previous paper, that in all cases where we had any reason to suppose the first two stomachs were affected, that "I would not rest satisfied till I were perfectly assured that they were effectually relieved," and that, "if we stopped short of this, the animal would be lost;" and I recommended *powerful purgative medicine, combined with strong stimulants and tonics, to effect this.* Mr. H. says, "how we are to know when the stomachs are emptied of their *indigestive mass* is to me inexplicable, consequently when to refrain from administering them" (the medicines necessary to effect this) "must also be unknown." He has here voluntarily placed himself in a dilemma, from which I am sure the smallest exertion of mental energy would at once have rescued him; for if he had forgotten that the fæces which would be voided, coming from this *indigested mass,* must be very different in appearance from those which the nearly-digested contents of the intestines would produce, he might surely have remembered, that, with regard to quantity, there would necessarily be such a difference, that any person, with a proper attention to this very important symptom, could not mistake.

Having helped him out of this difficulty, I will just notice the question proposed by him after judiciously stating the means of ascertaining disease of the rumen, reticulum, and manyplus. "Who will depend upon purgatives alone to restore the ruminat-

ing process ?" Now, considering this as more than tantamount to unloading the stomachs, I answer I would not. But while I should most certainly employ tonics and stimulants, such as I recommended in THE VETERINARIAN for June, for the same purpose, *I should, from thorough conviction* (on the view I have taken of the subject), *consider that I did less than my duty if I were to administer purgative medicines no more powerful, than those considered by Mr. H. to have produced death in his cases by superpurgation.*

You will readily conceive that I could cite parallel cases to those noticed by Mr. H.; but as they are what he has selected to illustrate his own views, and as I could not possibly quote or even invent cases more strongly proving the necessity of my mode of treatment, as opposed to his, I will make use of them, and they are already before you. Here are four cases, three of which terminated fatally, and one recovered. I perfectly agree with Mr. H., that, with regard to the first three, they were all cases of acute indigestion; that the view he took of them, viz. that the stomachs were in a state of torpor, and, consequently, that their contents became a load and burden to them, and that it was necessary to relieve them of this load, was correct in theory; and the mode of treatment proposed to be adopted was perfectly rational, though the means employed were inefficient.

In endeavouring to make any improvement of these cases, it becomes necessary to shew what important facts present themselves in the detail of the symptoms, treatment, and appearances after death. The most prominent are these:—that in all the three cases, the most violent efforts of which nature was capable were made to relieve that portion of the abdominal viscera that was suffering, in order to lighten that load which had already become burdensome and oppressive to the stomachs, torpid, enervated, and incapable as they were of exerting their native energy. Was it necessary, then, to give medicine to act upon the intestines alone? No. Nature was here doing all that was requisite; and that no impediment might remain in the way of those parts of the digestive organs already suffering, an increased action was given to that portion of the alimentary canal still under the controul of nature; and they were hastening to propel forward their contents, to make room for the oppressed stomachs to act. Mr. H. saw all this, and proposed his curative treatment accordingly; but were the means employed sufficient for the end proposed?

To determine this, we must consider them in conjunction with the appearance of these parts after death. To the first case he gave altogether magnes. sulph.; and the *stomachs after death*

were found to be "crammed full, hard, and dry." To the second and third he gave the same quantity, and afterwards, as he tells us, increased the purgative treatment; and in these cases, after death, *the stomachs were still found "full, but of a softer consistence" than the contents of the stomachs in the first case.* In the fourth case the purgative treatment was carried to a still greater extent; and though debility and its consequences were produced, *"violent purgation took place," and the stomachs were effectually relieved.* The symptoms were properly watched; that tact which distinguishes the scientific veterinarian was displayed; tone was given to the stomachs, *and the animal recovered.*

Now, gentlemen, does a calm review of these facts, such as I have stated them (in all points fairly deduced from, and in most using even Mr. H.'s own words), prove an excess or a deficiency in purgative treatment? Let us retrospect them. In the first case, where only ℔ij of magnes. sulph. was given, during the progress of the disease, *no perceptible effect was produced on the stomachs;* in the second and third, where more was given, *a very perceptible though not a sufficient effect was produced;* and in the fourth case, where a still greater quantity was given, and more powerful (for the ol. ricini was added to the magnes. sulph.), and in a shorter space of time too, *the required effect was produced, and the animal was saved.*

It is rather unfortunate for Mr. H.'s theory, that in four cases brought forward and designed by himself to illustrate the evil effects of strong purgatives, the only case that recovered was that one in which the purgative treatment was carried to the greatest extent. It is saying nothing in his favour, that tonics, &c. were employed in this case, because, before this was done, the grand object was accomplished; *the stomachs were relieved by the purgative treatment alone,* a circumstance which he has himself proved never was accomplished in the first three cases.

You will find that I perfectly agree with Mr. H. in the effect and necessity of strong stimulants and tonics, in conjunction with purgatives, in all cases where the rumen and reticulum are incapable of acting; and this I do from a conviction, that what would produce injury in some parts, by increasing the circulation, and exciting and irritating the nervous system, is here desirable, for this is the very effect we would wish to produce.

I cannot omit so favourable an opportunity of adverting to the effect of the magnes. sulph. when given to cattle. In p. 295 of THE VETERINARIAN for June, you will find I made some remarks upon its use, which are admirably borne out by these cases.

Mr. H., on a review of his own cases, comes to the conclu-

sion, that small doses of purgative medicines, combined with stimulants, &c., are decidedly the best means of meeting these stomach complaints. I can readily conceive that they may occasionally be sufficient, because we well know that there are many cases of the kind in which nature succeeds effectually by natural purgation alone; but whoever hopes by these means to effect a cure in severe cases, will be most wofully disappointed. I dare not depend on any thing short of *strong purgatives*, such as I described in a previous paper on the subject; and I again assert, that there is not that danger of superpurgation in the cow as in the horse (the remedies are more certain and more easily applied); and though I can call to mind, with pain, many cases in which I have failed from want of applying stronger remedies, I cannot recollect a single instance of having lost one case from superpurgation.

Quantity, as applied to medicine, is only a relative term. Every one knows that a dose of aloes, which would be quite sufficient to purge a horse under ordinary circumstances, would be altogether insufficient in a violent case of stomach-staggers; and in a state equally inert is the rumen and reticulum of the cow, under such circumstances as we have been contemplating; and if we would succeed, we must use means equally vigorous and decisive, as we should do with the horse in stomach-staggers. I say again, in such cases, spare not strong purgatives, but guard them by tonics and stimulants, and carefully watch their effects.

A CASE OF THE SUCCESSFUL TREATMENT OF RUPTURE OF THE TENDON OF THE TIBIALIS ANTICUS MUSCLE.

By Mr. W. Dickson, *V.S., Millerstain, N.B.*

On the 12th of August last, a farm horse, belonging to G. Baillie, Esq., of Mellerstain, while going in the chains of a cart loaded with hay, irritated by the flies, kicked over the chains, and so entangled himself, that before he was extricated he completely divided, by friction against the chains, the tendon of the tibialus anticus, about four inches above the hock, and consequently was deprived of the power of flexing the hock-joint. The leg was, when he moved, dragged after him with the appearance of being paralyzed; and the tendons of the gastrocnemii muscles, being completely relaxed, gave the limb the appearance of a fracture of the tibia. The wound was transversely across the leg, and, from the instrument by which it was inflicted, was much lacerated, and a portion of the tendon protruded about 2½ inches from the wound.

From the hopeless state of the horse it was thought scarcely worth attempting a cure, and it was nearly resolved to destroy him; but as I was anxious to have the opportunity of making the experiment of attempting to produce a reunion of the tendon, I was, after using some persuasion, allowed to try what could be done for him.

I first removed the portion of tendon which was without the wound, and which there appeared little chance of restoring to a state of vitality, from its torn and lacerated appearance; and, in the next place, I contrived to fix the leg so as to prevent the effect of the loss the limb had sustained being farther felt than in the inability of raising it. This I effected by applying a hobble to the pastern of the wounded leg; and by a line running from it to a collar fixed on the neck, and drawing it rather tight, I completely prevented the leg from being injured by dragging it after him; and also prevented the wound from being torn open. I also by this plan enabled the animal to stand upon his leg, which, indeed, he could do before, when his leg was fairly under him, because those muscles and tendons which support the limb while standing were not injured; but whenever he attempted to move, the effects of the injury were at once apparent. By this plan of fixing the limb it could never be allowed to go too far back, as the neck at once drew it forward. The wound was after this dressed with tincture of myrrh daily. A little tow and ointment of resin, and a light bandage were applied. In about three months from the accident he was going sound, and has continued to do so ever since, and is now at daily work.

ON VETERINARY DIPLOMAS.

Messieurs les Editeurs—the first and last of you on the list,

I AM sure that you have too much good feeling and good sense to be offended with this public appeal to you.

I understand that you either have made application, or mean so to do, that your certificates shall be received at the Horse Guards, on the same footing with those from the Veterinary College at St. Pancras. I can scarcely blame you for this. If the certificates or diplomas (or by whatever name the bits of paper are called) of one school are received, I see not on what principle those of the others can be refused. I have *heard* much of the first of you; and his ability as a lecturer—the public nature of his establishment—its connexion with the National Society of Scotland, and the nature of the examination of the pupils—public, and by competent judges—are pleas that cannot, in common fairness, be rejected.

Of the last of you I *know* a little: he has boldly and judiciously, considering the situation in which he was placed, brought his claim as a lecturer before the tribunal of the veterinary and medical world—he is connected with the first medical and general school in the empire—his pupils compete for the honours of that school, and the examination is conducted by competent judges; his plea cannot well be refused: and yet, gentlemen, it is only under peculiar circumstances, and circumstances which you might powerfully assist in changing, that I can bring myself to wish either of you success.

If one school possesses this privilege, I frankly confess that it should be extended to schools like yours; reason—equity demand it: but it is a bad principle that you are endeavouring more widely to establish. It is one that is totally inconsistent with the growing reputation of our art; it is fraught with the most injurious consequences.

It is a bad principle that the teachers should have any thing to do with the granting of diplomas. Teachers are but men; and they are no more exempt from favouritism and prejudice than others. There are more ways to curry favour with them than an honest, uncompromising search after truth. The pupil knows this well in all the establishments where the teacher has any thing to do with the diploma; he sees how it fares with his companions, and he labours far more to make himself acquainted with the peculiar sentiments, and even errors, of his master, than to devote the most important years of his life to the acquirement of sound and sterling principles of practice. The veterinary world can never be protected from incompetent practitioners—veterinary science can never progress as its friends wish that it should, while the teachers have any thing to do with the granting of the diplomas.

I endeavour to place myself in your situation, and then I ask what course should I pursue; and that brings me to a mere matter of calculation. Have you any chance of effecting that change which is most to be desired in this matter? Could you obtain the appointment of a certain number of veterinary surgeons, selected from the general body, with this proviso only—*that they shall be unconnected with any school*—and who should constitute a board of examiners, before whom students, in whatever school educated, should be required to appear prior to their commencement of practice? Could you have one of these boards for the north and another for the south of the Tweed? You best know what probability there would be of this—perhaps not much in the present state of things; and yet I cannot help thinking, that you should have tried, and publicly tried, to effect this, before you claimed that which, although a matter of fairness and jus-

tice to you, is not what the friend of veterinary science would exactly wish.

To a considerable extent, however, I give you credit even here; for the one has invited veterinary surgeons to the examination of his pupils, and they have come, and they have questioned the pupils, and somewhat severely too; and the other, although he has not had a public *vivâ voce* examination (which I think he should have had, and trust he will have another time), yet has submitted the written essays to the judgment of veterinary surgeons alone. I think you have done a good deal to put these things on their proper footing, and the profession will duly estimate your conduct; yet *you* have somewhat too much to do with these examinations—you have too much influence over the decision; and I, after all, have still only the certificate of competence granted by a private school, and sanctioned by *the friends of the teacher;* a document, I acknowledge, of some value, yet not to be compared with one emanating from a board independent of all teachers, and representing the veterinary body.

After all, gentlemen, you must pursue your course. You are demanding a privilege to which you have as clear a right as any other school, and I do not see how it can be justly refused to you; and, once being put in possession of that right, you are now shewing us that you would exercise it in a manner more consistent with the respectability of our profession than has been hitherto done (this is the first harsh expression, or the first unpleasant comparison I have made, for I am no party man; and there was a time when, on perusing your periodical, I used often to exclaim, "A plague on all your parties!!); but I must repeat, that it would have been better if you had previously made one vigorous, although unsuccessful effort, to have placed the granting of veterinary diplomas on its proper footing.

I am, gentlemen, with unfeigned respect, your's, &c.

An old Practitioner.

THE VETERINARIAN, SEPTEMBER 1, 1833.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

THE EFFECTS OF THE WOORAARA POISON—ITS ANTIDOTE.

We are distinctly and unequivocally opposed to all experiments upon living animals, when the facts can be ascertained by any other means; and, unless some very useful end is to be ob-

tained, will never sanction any experiment which has even the appearance of unnecessary cruelty: but it is evident that, in many cases, where the effects of medicines are unknown, and where a remedy for the cure of some obstinate or untractable disease is wanting, some experiments may be allowable; and when these are warranted by circumstances, we shall have no hesitation in laying them before our readers. The following are of the kind we allude to, and we have no doubt will be interesting:—

About three months ago, a medical gentleman having obtained a quantity of the Wooraara or Guiana poison, and having applied to us to obtain a dog to try its effects upon, we procured one which the owner wished to have destroyed, in consequence of incurable paralysis; and, having made an incision on the inside of the thigh, a quantity of the poison, about the size of half a pea, previously moistened, was spread upon the wound. The dog was allowed to walk or stagger about the room, which he continued to do for fifteen minutes, without evincing any symptoms of the action of the poison. At the expiration of this time, a twitching of the muscles began to take place, and he immediately became convulsed, and died in seventeen minutes. The poison seemed to operate as a powerful narcotic, producing first convulsions, stupor, interruption of the functions of the thoracic viscera, and death by that means. The vessels of the brain were turgid with blood, and the lungs and heart were in a state of congestion.

Wishing to try the effect of this active agent upon the horse, the gentleman left us a small quantity of it; and having obtained a pony about twelve hands high, which was aged, and affected with incurable lameness, besides having a fracture of the pelvis, we made an incision through the skin on the breast, and introduced a little more of the poison than had been used for the dog; but, after watching the case for three hours, no certain symptoms of the action of the poison appeared. There was some slight twitching of the muscles; but, as the animal was suffering considerable pain from the fracture of the pelvis, and was scarcely able to rise, it is more than probable that these spasms arose

from the pain and uneasiness which the animal was otherwise suffering. Being unwilling to wait longer, we dissolved a small quantity of the poison in water, and, having opened the jugular vein, injected about an ounce and a half of the fluid. The animal was almost instantly seized with convulsions, and seemed in a dying state.

It was then thought advisable to try the effect of an antidote; and a pailful of cold water was first dashed about the head, which seemed to refresh him in some degree; after which four drachms of aqua ammoniæ, diluted with ℥viij of water, were given, which was swallowed with difficulty. In a few seconds, however, the animal revived so much as to be able to lift its head and attempt to rise.

After allowing it to remain quiet for some time, and having given a quart of water, the convulsive sobbing and difficulty of breathing subsided, and there appeared no doubt of its recovering from the effects of the poison.

A rather larger quantity of the solution of the poison was therefore injected into the veins, and allowed to produce its full effect, and the animal was destroyed in about five minutes. The effects of the poison were similar, in regard to the symptoms it produced, to those exhibited by the dog; and the examination of the body also shewed little variety. There was great engorgement of the heart and large veins, and some blood in the arteries. The vessels of the brain were also turgid with blood.

THE BENEFICIAL EFFECT OF THE ERGOT OF RYE IN DIFFICULT PARTURITION.

On the 10th instant, a pointer bitch produced two puppies; and it was thought by the person having her in charge that she had no more. She was put into a comfortable box, and, with a little care, was expected to do well. On the next morning, however, she was sick, and breathed heavily, and continued rather uneasy all that day.

On the forenoon of the 12th, I was requested to see her. I found her with her nose dry, breath hot, respiration frequent, mouth hot and parched, coat staring, back roached, pulse 120,

and a black fœtid discharge from the vagina. Pressure on the abdomen gave pain, and a pup could be obscurely felt: the secretion of milk was suppressed, and the skin had lost its natural elasticity.

Tepid water, with a little soap dissolved in it, was immediately injected into the uterus, which, in a considerable degree, excited its action; and this injection was repeated two or three times with the same effect. The water was ejected, together with some fœtid matter from the womb; but, after waiting for half an hour, the fœtus was not discharged, nor brought forward.

A scruple of the ergot of rye was then made into an infusion with ℥ij of water, and one-third of the infusion given as a dose; in half an hour another one-third of it: the injections of warm water and soap being also continued. Soon after the second dose of the infusion, a dead puppy was expelled; the bitch rapidly recovered, and, with the exception of deficiency of milk, is now quite well.

This case would seem to prove the great power of the ergot of rye over the uterus; but, until more experiments are made, it is necessary to be cautious in ascribing powers to medicines which have not been much tried in our practice. It is not improbable that the warm water and soap might have roused the uterus into action without the aid of the ergot; and it is, therefore, necessary that those who repeat this experiment should try the effects of the medicine unaided by the other auxiliary. The great power which this medicine is said to have in the human being, and the apparent effect in the case just given, suggests the propriety of instituting a farther trial of it, and of extending it to cattle, amongst which difficult cases of calving so frequently occur. If its effects are found to be equal in cows to those which are ascribed to it in women, it will be found a useful addition to our limited pharmacopœia.

ON SOME LATE EPIDEMIC DISEASES AND CHARACTERS OF DISEASE.

For these three years past the influence of the atmosphere, under the various changes it has exhibited, has been peculiarly

marked in its effects upon the bodies of animals, especially in the northern metropolis, and surrounding country. First, in producing the fatal and destructive bronchitis which so generally prevailed; next, in derangements of the bowels analogous to cholera; and lastly, in three other forms of disease:—First, sore throat, terminating in strangles, in which the disease appeared in varied forms, the abcesses being found in all parts of the body, and, in some, proving fatal by the tumours interfering with the functions of organs essential to life (the lungs and abdominal viscera); and, in others, proving destructive, by the abcesses bursting into the chest or abdomen, and setting up a destructive irritation.

Secondly, Erythematous disease, in which sudden eruptions have taken place generally over the whole body, attended with low febrile action, weakness, and slight soreness of the throat, but, otherwise, with little disturbance of the respiratory organs; slight derangement of the abdominal viscera, but no apparent derangement of the sensorium: the eruptions on the skin, in some cases, disappearing as suddenly as they came, but generally returning a few times before they entirely left the animal; in other cases proceeding at once to a slight effusion from the surface of the tumours, followed by a desquamation of hair, and then going quite off; while, in others, a permanent alteration of the skin has followed, by a deposit of a small quantity of calcareous-like matter in it, forming little tumours. The animal during the disease shewed considerable weakness, attended with loss of flesh and condition; being unable to stand free blood-letting, and, from the absence of the buffy coat on the blood in the early stage of the disease, apparently not requiring it; therefore mild purgatives, with diaphoretics, producing the most speedy return to health.

Thirdly, The frequent occurrence of tetanus, of which we have seen six cases within the last four months, and have heard of many others. Four of those which we saw occurred in April, and two in July. Those in April arose from the effects of cold, being attended with symptoms of an affection of the pleura, and which was proved by the *post-mortem* examination of one of

them: the other three recovered. The other two cases arose from wounds: one from broken knees, which proved fatal; the other from a large lacerated wound of the hip, and which has terminated favourably. The treatment consisted in the exhibition of purgatives, of which croton-seed was the chief; and which, in this case, is a most valuable remedy, from the smallness of its bulk, and from its not very quickly giving out its taste to the mouth; the animal, as long as the power of deglutition remains, being able to suck it up with his drink. Forty grains is usually a sufficient dose, but more is sometimes required. Aloes are, however, equally efficacious if they can be given; but it is always advisable to allow something extra, to make up for what is lost in giving. It is of the greatest importance to get the bowels open; so much so, that if that is effected the animal almost always recovers, if proper auxiliary treatment is adopted; while, on the contrary, without the free evacuation of the bowels, the disease seldom subsides. Bleeding is generally required during some stage of the disease, in order to relieve the lungs and head from the oppression produced by the great determination of blood to them, from the continued firm contraction of the muscles. Blisters are also of use to the throat, and in those cases where the chest is much affected: where pleurisy exists, the sides also should be blistered. Farther than this, every kind of irritation ought to be carefully avoided. Quietness is of the greatest importance in the treatment of the disease, and this should be carefully attended to in the administration of medicines. A very little rough usage will often render the case hopeless. On some future occasion, we purpose to offer some remarks on the pathology of tetanus.

A TUMOUR OR CLYER IN THE UPPER RESPIRATORY PASSAGES OF A COW.

We have been consulted on the following case:—"A cow, ever since she was taken up from grass last season, has been violently ill with supposed asthma. The respiratory muscles of the chest and abdomen act with great violence; her nostrils are distended; much saliva runs from her mouth, and her tongue hangs out.

She had a calf this season; but that has made no alteration in her symptoms. She is sometimes a little easier when her stomach is empty. Her breathing may be heard at some distance from the byre door; she is in fair condition, but has fallen off a little lately. Mr. R— and Mr. L— have seen her as well as myself, and we are all at fault; and I will therefore feel obliged by your advice, as she is a favourite cow." This appears to be a case of tumour, or, what in Scotland is termed a clyer, in or about the larynx, and might possibly be removed by the hand introduced through the mouth, as we once saw in a case something of this kind. There is a preparation at the St. Pancras Veterinary College of this sort. The tumour is anterior to the epiglottis, and had it been known might, perhaps, have been drawn out; but the animal broke his back while he was cast, during the operation of tracheotomy, or rather while passing a probang upwards from the opening which had been made in the trachea; and by this means the tumour and its situation was afterwards discovered.

D.

Medical Jurisprudence.

We are sometimes called upon to discharge the unpleasant duty of arbiters in horse matters. There is a business and an un-business-like way of doing all things; and a man's reputation for general talent, and for that talent brought to bear upon his own profession, may be much affected by the manner in which he sets to work here.

We have been so fortunate as to obtain the copy of an arbitration with regard to the health and usage of a horse. The arbiter enters fully into the case—he labours it more, perhaps, than was necessary; but he shews a great deal of good sense, and a perfect knowledge of what he was about. If his arbitration does not serve as a perfect guide to us in somewhat similar cases, it may afford us some useful hints. We suppress the names of the parties, although some of them richly deserve exposure; and they have exposed themselves wherever the circumstances were known: they were brutes in human shape.

A horse was hired from C. S. to go a certain distance; he was taken a much greater one. He was, as one party affirms, ill-used upon the road,—he was brought home ill,—and a little while afterwards he died.

The arbiter thus gives his decision on the case:—

The arbiter has not had much difficulty in disposing of this case, and he thinks he would be doing manifest injustice if he should adopt, upon the evidence, any conjectural opinion as to the existence and formation of previous disease as a ground for refusing to award to Mr. S—— the value of his horse.

The case is very simple and very clear. The previous state of the horse is matter of positive proof, and not of opinion merely. M——, the hostler, who had charge of the horse, swears distinctly, that the horse was previously quite well; that he had no cough, or any appearance whatever of disease. Mr. P—— knew the horse perfectly; had frequent opportunities of seeing him, and saw him some days before; and he says the horse was previously quite well. H——, who was then in S——'s stables, speaks to the same facts. And this evidence is confirmed by A. L., by T. W., by J. L., and C. S., though the two last do not come up to the very day of the hiring. It is also both proved and admitted, that the horse performed the journey to C——— apparently with ease, and arrived without any symptoms of distress. The arbiter holds the previous state of the horse, therefore, to be matter of direct and satisfactory proof; and he cannot disregard this testimony upon any vague conjecture or suspicion that there had been previous inflammation actually commenced and formed, merely in consequence of the opinion of scientific persons, in itself, as will be seen, most contradictory. When a person in S——'s situation lets out a horse to hire, the arbiter does not see what better proof he can bring, or can be expected to bring, of his horse being well and sound, than that which the claimant has brought. Besides, considering how well the horse did the journey to C———, and, as the other parties say, for the greater part of the way back, the arbiter thinks it would be very hazardous indeed upon any mere opinions to assume that that horse was labouring under inflammation actually formed, and of such duration as to have advanced to the stage of tubercles. The arbiter thinks it quite plain that there is ample clear evidence that the horse was well, and fit for the journey, and would not have suffered if he had not been overpressed.

As to his treatment, the arbiter does not think the early part of the day of very much importance. Undoubtedly the person hiring the horse for H. C. and J. H. did not deal fairly with

Mr. S——. M—— is quite positive that the horse was hired to go to B———, and to *be put up there;* and even if it had been said that the object had been to look at a farm beyond B———, the arbiter does not think that this was fair dealing with S——; for, according to the truth of the case, B—— had no more to do with the day's journey than any other place upon the whole road, as it was never intended to be the resting-place or the limit of the journey. To mention B——— at all was, in truth, mere deception; C——— was the proper inn to mention, and was accordingly the intended place of destination and of rest. The reference to B——— was the more improper, because the last part of the journey was the most severe. The arbiter does not hold, however, this part of the case to be decisive. If the horse had been well treated, he probably would not have suffered. But there was deception beyond doubt, and the journey was longer than that contracted for. The circumstance now adverted to shews a consciousness on the part of the defendants that the day's journey was to be a severe one. And it certainly required due consideration for the horse, as no one can dispute that forty-four miles with a gig is likely to be a sufficiently trying day's work for a horse not known to the party driving him. The arbiter thinks the treatment at B———, in going out, certainly injudicious on a cold frosty morning; whether the horse got chill or not on that occasion it is difficult to say. But if the horse fed well afterwards, probably he had not suffered much; although the arbiter suspects that he was left longer at the door of the inn than the hostler seemed to think, both because there was nothing to fix the time in the lad's recollection; and the very direction to wisp him down, certainly implies an intention to stop longer than merely to give some meal and water. But though the cold meal and water so early in the day, and possibly the time he stopped, was not judicious, yet there is, perhaps, not ground positively to ascribe to this part of his treatment any such chill as to lead to the conclusion that the horse had then been seriously injured, if the fact was that he had fed well at C———, although the arbiter thinks it probable that the horse was put out of heart. But then there is something very singular about the next part of the case.

The horse seems to have been sufficiently rested at C———, and to have been well treated there. The lad who was in the stables says, that the horse ate more than a feed and a half of corn; in other words, that he had eaten very heartily, leaving *very little of the second feed,* and that he *started quite fresh;* and that he cannot recollect speaking to his master about the horse not eating, and also that nothing struck him as to any disincli-

nation to eat, of which, indeed, if he ate nearly two feeds of corn, and also hay, there could have been no appearance. But his master says, that something *hankers in his mind about the horse not eating,* and certainly this is very strange, because he professed to remember the day and the circumstances very distinctly; and if his servant was accurate, it is not possible that any thing could have passed at all about the horse not eating. This part of the master's testimony makes the arbiter distrust a little the accuracy of the hostler's recollection. But, however, if the horse ate heartily after being driven for twenty-two miles, and was very fresh on starting (as the hostler says), the arbiter thinks that this is tolerably satisfactory real evidence that the horse was not then labouring under inflammation formed before that day's journey.

From C——— the horse was driven home, without stopping for any rest, and without any other stop at all than may have tended to chill him. That this may be done in similar circumstances, and that even the same horse might not at other times have suffered, may be very true. A horse, just like a man, will knock up one day much more easily than on others, although labouring under no disease. But though the horse might have suffered no injury from being driven in without any second rest, it was unquestionably tasking the horse much so to use him; and the consequences must be with the party who so presses and tries the horse, if he does knock up.

The arbiter thinks it very clear that the horse was overworked. It is not very likely that, considering the time of day, the distance from home, and the change of companions with F——, who says that he was driving at a moderate pace, that they would have fallen behind him even on the first part of the journey, if the horse had not begun to fag. They stop for a short time in coming in at P———. It is not proved that the horse was then covered; and Mr. P—— swears expressly that Mr. C—— admitted, after the horse was ill, and in extremity, that he would not feed at C———; and in the defendants' answers they state, very guardedly, that meal and water was then offered to him: which expression, with the absence of any evidence that he was able to eat, seems very satisfactorily to confirm Mr. P——. Without resting the horse, however, they drove on to D———, where they again stopped, and it must have been then nightfall, for about ten minutes (as they state), leaving the horse in the open air. Now taking the period of the year, and the fact that this was a cold frosty day, the arbiter cannot hold this treatment as judicious and fair to the horse; or come to the conclusion, that the facts which followed are in no-

degree to be ascribed to the probability of severe and sudden chill. There is nothing more likely to have struck a chill upon the horse, if hot and jaded, than such treatment. Then, what happens? That the horse was by this time jaded is perfectly clear; and the defendants themselves state, that after leaving D——, they found the horse fagging; that they got out of the gig, and walked the greater part of the road. That the horse must have been pretty well done up previously is, from their own statement, perfectly clear; and it is equally evident, as a matter of common sense, that at that period of the evening the parties would not actually have got out of the gig and walked, if the horse had not been utterly done up. People may walk a horse or drive him slowly to save him, if he is merely fagged; but he must have been utterly done up before they would leave the gig in a winter evening when it was dark, and themselves walk four or five miles on the high road. But the state in which they brought the horse to the neighbourhood of the stable is also conclusive upon this point, as well as upon the point of over-driving. It is needless to advert to the evidence upon this point, which is equally clear and emphatic. It is perfectly plain that the horse had been driven without a rest until he was completely done up; and then, when they got near the stables, that he was furiously lashed, in order to arrive at some sort of a show of the horse being able to trot when they got near to Mr. S——'s stables. The scene, as described by the witnesses, is very significant, both as to the state of the horse, the manner in which he had been previously driven, the want of consideration and regard for the horse, and the recklessness and style of driving of the defendants. That a good deal may be ascribed to their ignorance of the mode of treating the horse may be true; and perhaps their driving back from C——— without resting; and overpressing the horse at the same time, may partly be accounted for by the fact, that they were in company with Mr. F——; had interchanged companions; were to stop together at D———, to make a call; and in this way had urged the horse on long after he was tired, in order to keep near Mr. F——.

That it was the duty of the defendants when the horse began to fag, and especially if he refused meal and water at P———, to give him a good rest, it is impossible to doubt. And as the horse was so utterly done up after they passed D———, there cannot be the smallest doubt that he must previously have been very much distressed; and if the defendants had not skill to notice that, the loss must lie with them, and not with the plaintiff.

Then the horse is seen immediately upon his arrival by

M——, by I——'s hostler, by P—— S——'s clerk, and by Mr. P——, farrier; and these witnesses, all competent judges, state expressly that the horse had all the *appearance of being done up;* that he *was over-driven, much jaded;* and, in short, had every appearance of being in extremity from over-fatigue, and of being done up by over-exertion. And, indeed, that such was the actual state of the horse is admitted by the defendants themselves. Now how can the arbiter reasonably or justly ascribe this state of the horse, his rapid illness, and his death, wholly to disease, with only fair exertion, when it is admitted that he got no rest upon the journey home, and that, although he knocked up upon the journey, yet he was driven on? It seems ludicrous to ask the arbiter to hold that this state of the horse arose wholly from previously existing inflammation, without any over-exertion, when the horse actually fagged and knocked up upon the road—got no rest at all—and was, nevertheless, driven and pressed on in this state of exhaustion and fatigue. It was the business of the defendants, when they found the horse jaded, to give him a good rest; and if the horse was done up, and unable safely to go on, without any fault on their part, they should have left him, and hired another horse or a post-chaise, or come in by a coach at the expence of the plaintiff. But though the horse fagged, and was at last utterly done up, they chose to continue driving him at the end of this long day's journey, without any rest, until he was in a state of extremity. That the horse was therefore *over-fatigued* seems to be too plain to admit of a doubt; and that he was overdriven is apparent, even on the defendants' own statement of the case. And then, besides, there is the opinion of most competent judges who saw him at the time. Now, as the horse was in this state when Mr. S—— turned the defendants out of the gig when they arrived, they had it then in their power to have got a farrier on their part to see and attend to the horse; and they were actually at the stable afterwards, while P—— attended, before the horse died. Hence the arbiter must assume, that no other opinion could have been formed by any one at the time than that the horse had been overdriven. The treatment of him by Mr. P—— was unexceptionable, and is not complained of.

Then he is examined after death. Mr. P—— says expressly, that he died of inflammation in the lungs, produced by over-exertion. He was not particularly questioned as to the tubercles, but that was the fault of the defendants, if they meant to raise a question upon that point. Says expressly, that the horse could not have done the journey if there had been previous inflammation, and that all the symptoms might have arisen, as they often

do arise, from over-exertion and bad treatment within the time. Then Mr. W—— was examined by the defendants, who had sent him to be present at the inspection of the horse; and his statement, being a witness of the defendants, is of the highest importance. He says expressly that the appearances were not of long standing, and might have been brought on by one day's driving, as they sometimes come on very rapidly, although it is difficult to answer such a question; that the inflammatory state of the lungs, and the water in the chest, might have been brought on by over-driving, which would produce tubercles; that these appearances might all have arisen in twenty-four hours, and that the lungs were in a state of congestion; and he gives his opinion, without qualification, that the death was from over-driving. The congestion in the lungs, to which he speaks, is most important. Now this being the defendants' own witness, the arbiter thinks it puts an end of itself to their case. To be sure, the defendants have some contradictory evidence; but when the plaintiffs case is clear, and one of the defendants' own witnesses, a man of skill, whom they specially sent to examine the horse, also proves the plaintiffs case, so that two out of the three, who inspected the lungs, conclusively establish that the appearances were produced by over-exertion, and not from previously existing disease, how can the defendants expect the arbiter to adopt the opinion of the third inspector, or to decide in their favour because their own case is contradictory?

But the part of the defendants' evidence on which they rely is very unsatisfactory.

Mr. D—— did not think the appearances had existed any length of time—not above two or three days. Now this both contradicts and puts an end to the opinion of Mr. G——, who had not seen the horse, for he holds that even the spots indicating the tubercles could not have arisen in less than eight or ten days; and even when D——'s testimony was read over, holds that the appearances could not have arisen in so short a space of time. Now to take the theoretical opinion of Mr. G—— against that of Mr. D ——, formed upon actual inspection, the arbiter thinks would be quite extravagant. Now, Mr. D—— is merely of opinion that the inflammation in the lungs, and the concomitant appearances found after the state of extreme over-fatigue, might have existed a day or two longer than the day of the journey, for he goes no further. This would have been all very well, if nothing had happened to produce these appearances rapidly: but the over-exertion will of course make the progress of inflammation from that cause very rapid; and as there was only the appearance, or the first stage of the tubercles, according

to Mr. D——, the arbiter cannot possibly lay aside the opinion of P—— and W——, who had no doubt that the over-fatigue did produce the appearances, and adopt Mr. D——'s opinion, that there had been inflammation of one or perhaps two days' standing. When there is an amply sufficient cause to produce rapid inflammation, which Mr. D—— himself admits must have operated to a very great extent, and when he admits that the previous inflammatory cold could only have been slight, as the horse otherwise could not have done the journey, the arbiter thinks it would be rather too strong a conjecture to throw aside the over-exertion, which is admitted to have operated to a certain extent, and to hold that there had been a prior cause, upon the opinion of one out of the three inspectors. The arbiter can easily understand that many people may not have seen inflammation spread so rapidly as others, and that may be the situation of Mr. D—; but Mr. P—, and Mr. W—, the former a witness of undoubted experience, and the skill of the latter vouched for by the defendants by their employing and examining him, had seen instances of more rapid inflammation, and they have no doubt that the horse died from over-exertion, and that the appearances in the lungs were fully accounted for from this cause alone. And as the cause was a very severe one, and the horse, when brought home, was in a state of the utmost extremity, the opinion of the two inspectors seems much more reasonable than that of the third. But taking it as a mere question of evidence, the arbiter does not think that there is room for him entertaining any different opinion from that of the two inspectors; and that, perhaps, the case of the defendants was knocked up the moment the testimony of their own witness Mr. W—— was given.

Upon these grounds, the arbiter has no difficulty whatever of holding the defendants liable for the value of the horse.

As yet there has been no direct evidence of the value of the horse; but there is ample proof that he was a very excellent, serviceable horse, well known to be such, in considerable request, and fit for a variety of work. The price put upon him by the plaintiff seems to be extremely moderate. But the defendants are entitled, if they think fit, to lead evidence upon this point; and they will intimate therefore, within four days after the arbiter's notes, whether they mean to undertake a proof as to the value of the horse, or dispute the value of £40 put upon it by the plaintiff, with legal interest from the said 2d of January.

The expences of the submission and decreet arbitral the plaintiff will be entitled to as a matter of course.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Lectures on Veterinary Zoology, and the Rearing and Management of Animals. By L. F. Grognier, Professor at the Veterinary School at Lyons. Nos. 1 and 2.

Veterinary dietetics have not yet been treated of in a complete manner in any work; and this omission is more prejudicial than is generally imagined, because, by a study, better followed up, of the proper feeding of animals, numerous and interesting relations might be established between the agriculturist and the veterinary surgeon.

M. Grognier, who is well known both as a scientific agriculturist and a veterinary surgeon, has undertaken the composition of a work of which we stand in much need. His intention is successively to treat on the general food, and management, and amelioration of the breed of horses, cattle, sheep, pigs, dogs, bees, and silk-worms; which constitute the circle of rural veterinary economy.

This chief subject of his work is preceded by a short course of veterinary zoology.

M. Grognier has comprehended under this title the natural history of both domesticated and hurtful animals. Thus in two parts, each containing four sheets of letter-press, already published, and classed in zoological order, an account has been given, first, of the domesticated mammalia; secondly, the hurtful mammalia; thirdly, the domesticated gallinaceous and palmated animals; fourthly, the bee and silk-worm; fifthly, the insects hurtful to cattle, which belong to the genera of gad-fly, gnat, and horse-fly.

The Veterinary Zoology will probably be terminated in the third number; and after which will come the rural veterinary economy, and which will also appear in numbers.

The author hopes to be able to terminate his whole subject in sixteen numbers.

Recueil de Méd. Vét., Feb. 1833.

Lectures on Veterinary Zoology, &c. Nos. 3 and 4.

As we had imagined, the veterinary zoology was terminated in the third number of M. Grognier's work. The fourth comprehends the commencement of *therapeutics*, or the treatment of domesticated animals both as it regards their food and general

management; and this part, on account of its novelty and the practical hints which it contains, will interest every veterinarian.

The table of contents which terminates the course of zoology will suffice to prove that the author has had the good sense to limit the descriptions and considerations of natural history into which he has entered to those animals most useful to be known; being perfectly aware that that which is useless, or of very little importance to be treated on, will only defeat the object he has in view.

The plan of the course of veterinary management is given in the fourth number (first number of the second part). It is divided into four sections.

Section 1.—*Air and Situation.*

We ought to consider under the relation of influence on the health of animals,

First, The divers states of the air, its vicissitudes, the phenomena (meteors) which it presents.

Secondly, The substances foreign to its composition which may alter its purity; their origin, their effects, and the means of neutralizing them.

Thirdly, The seasons, climates, localities, and the modifications which they impress on domestic animals.

Fourthly, Constant pasturage, both by night and day, in all seasons; a state of liberty either in woods and extensive grounds, or in enclosures or parks of less dimensions.

Fifthly, Temporary pasturage on commons, uninclosed or untilled land, woods, marshes, mountains, meadows, &c.

Sixthly, Permanent stabling, mixed food, and the system of wintering.

Seventhly, The habitations of herbivorous animals: stables, cow-houses, sheep-folds, and goat-houses.

Eighthly, The habitations of other domestic animals: kennels, pig-sties, hen-roosts, dove-cots, rabbit-warrens, and bee-hives.

Ninthly, Faults in the construction or situation of these habitations, and the effects which result from them.

Section 2.—*Food, Drink, &c.*

In this section the most extensive view of veterinary therapeutics ought to be considered.

First, Of food in general, the principles of feeding, and the physiological effects of different kinds, independent of their nutritive quality.

Secondly, The food proper for each species, according to their

age, situation, the season, the nature of their services, and their physiological condition.

Thirdly, Medical diet and regimen, green food, and particularly as it regards the horse.

Fourthly, Permanent meadows, their composition, their deleterious productions, the qualities, improvement, and deterioration of hay.

Fifthly, Temporary grass fields (artificial meadows), their culture, composition, produce, and influence on the multiplication of cattle.

Sixthly, On cabbages, turnips, and green leaves, dried food, straw, bran, &c.

Seventhly, The different kinds of grain and fruits.

Eighthly, Of mashes and other alimentary preparations, their composition.

Ninthly, Of animal food.

Tenthly, Of natural drinks, reservoirs, &c.; the alteration which water undergoes; nutritive drinks.

Eleventhly, Of condiments: of salt; the distribution of food, drink, &c.

Section 3.—*Exterior Applications and their Effects.*

The objects of this section are as follow:—

First, Frictions, baths, lotions, and other precautionary treatment.

Secondly, Shearing, clipping, cutting (setting aside surgical cases) the tail, ears, horns, organs of generation. The medical effects of these operations.

Thirdly, The cautery considered with regard to its sanative effect.

Fourthly, The harness, yoke, collar, reins, and curbs; the effects of their faulty construction.

Fifthly, The effects of winged insects; parasitical animals; preservatives against these animals; clothing, with reference to temperature; ornaments.

Sixthly, Good and bad treatment; their influence on the character and health of animals.

Section 4.—*Services and Produce.*

As it is to obtain the services and produce of domestic animals that we keep them, this section is the summing up of those which have preceded it; and as the preservation of their health is subservient to our interest, it is not the therapeutical treatment only which ought to be comprised in this section. It treats of the following subjects:—

First, The method of harnessing and managing the animals employed either in agriculture, or in cart or waggon work; their regimen, the employment of their strength, and a comparison between them.

Secondly, The management and regimen of saddle-horses, draught-horses, and carriers'-horses; their use for all other services beside those of agriculture.

Thirdly, The particular regimen of troop horses, race horses, hunters, &c.

Fourthly, The proper management and treatment of milch cows.

Fifthly, The secretion of milk; the circumstances which influence this function, and its produce.

Sixthly, Milk and milking.

Seventhly, Wool, hair, feathers, silk, honey, and wax.

Eighthly, The produce of the dung-heap; the sheep-fold, &c.

Ninthly, Fattening; its physiological conditions, the means by which it is accomplished, and its produce.

Tenthly, The qualities and consumption of food; destruction of animals, under the relation of medical police and public economy.

Such is the prospectus of the subjects that will be treated of in the course of veterinary therapeutics by M. Grognier: but, as he remarks, we must not consider it as an absolute programme, much less as a table of contents; it is only a plan, a project from which he may swerve a little, but which will give a summary idea of what the work will be when it is completed.

After this exposition of his subject, M. Grognier enters into a consideration of the first. The differences which may exist in the weight of the air, its temperature, its dryness, and the influence of these on the animal economy, are treated of in one chapter. The next contains several speculations on the agency of light, and of some atmospheric phenomena. The alterations which result from the intermixture of deleterious substances with air form the subject of the third chapter; and here, beside the gases which are habitually foreign to the air, and which, nevertheless, often contribute to vitiate it, the emanations from marshes, much oftener hurtful, attract particular attention. In speaking of their dispersion through the air, M. Grognier supposes that they rise to the height of 200 or 300 toises, that they do not extend themselves horizontally more than 150 toises from the focus of infection, and cannot be transported much further by the winds. Without denying the truth of this assertion in some cases, we must say, that many circumstances may probably influence its dispersion. Rigaud de l'Isle, cited by M. Grog-

nier, asserts, that an elevation of 250 or 300 toises is perfectly safe, even in the neighbourhood of the Pontine marshes. Thus, in what relates to these emanations, and in many other parts of therapeutics, data, well determined, are still wanting; and we are compelled to continue a course of observation and study in guiding ourselves by the knowledge we have already acquired. Positive science we can never have. Reason only requires that, in cases of doubt, we should rather err through excess of caution than in any other way.

The morbid animal emanations having as their character the power of producing diseases similar to those of the animals from which they proceeded, and of acting equally as powerfully in small as in large quantities, the result being always the same—the production of a similar disease—these have constituted another subject of study which has not been neglected by M. Grognier.

The fourth number is terminated by the influence of the seasons on the health of domestic animals. That on climates is reserved for another course. Frequently, each object requires to be examined under more than one point of view, in order to be well understood. In several chapters, M. Grognier reserves to himself the completion of his subject to a future period, when he will resume the consideration of the matter. This method, which is necessarily a little abstract, has also its advantages; it is the most rational, and is best calculated for oral or written instruction; and there are lessons now published in this work which will not readily be forgotten. The instruction will be complete when the course is terminated, and until then all judgment would be premature; and we must content ourselves with saying, that all his engagements are most scrupulously fulfilled; that the work of our friend is an honest one; that from all that is known of M. Grognier, and the direction which he has given to his researches, and his labours, the greatest interest will be attached to the work which he has undertaken.

Recueil de Méd. Vét., April 1833.

Veterinary Affairs.

Extract from the Public Sitting of the Royal and Central Society of Agriculture, on Sunday, April 29, 1833.

Report of the Concours for the distribution of prizes for the best essays, memoirs, and observations on veterinary medicine:

Commissioners:—MM. Tessier, Huzard, sen., Girard, A. Yvart, and Huzard, jun.

1*st.*—*Honourable mention* was made (for the second time) of M. Revell, veterinary surgeon to the first regiment of Hussars; and M. Magne, chef de service to the royal veterinary school at Lyons.

2*d.*—*Large silver medal* to MM. Lecoq, veterinary surgeon at Bayeux (Calvados); Lecoq chef de service at the royal veterinary school at Lyons; Mangin, veterinary surgeon at Verdun (Meuse).

3*d.*—*Theatre d'Agriculture et Menage des Champs,* par Olivier de Serres (the society's edition), to M. Lautier, veterinary surgeon at Rennes (Ille et Vilaine).

4*th.*—*A Collection of Memoirs of the Society* to M. Mathieu, veterinary surgeon at Espinal (Vosges).

Gold and silver medals, and works of agriculture, will continue to be distributed, in 1834, to the authors of the best works, memoirs, and practical observations on veterinary surgery, sent to the society.

The society also proposes to give, in 1834, a prize of 1,000 francs, which shall be awarded to the author of the best essay, founded on observations and experience, which shall prove whether the disease of the foot, known under the names of foot rot and foul in the foot, in sheep and oxen, is or is not contagious.

Also, medals of gold or silver for the best memoirs which shall treat either generally or minutely of the other diseases which affect the feet of these animals.

We repeat that the essays, authentic attestations, &c., must be sent to the society under cover, to M. le ministre de commerce, post-paid, before the 1st day of January, of the respective years for which the prizes are announced.

The authors of the essays or observations must not make themselves known, but must only attach a motto or device to their manuscript; or, rather, they should enclose with it a sealed billet, containing their name and address.

The society reserves to itself the absolute power of retaining, and making use of, either wholly or in part, the essays and observations which shall be sent to each concours.

Recueil de Méd. Vét., April 1833.

Extracts.

Observations on Chronic Pleuro-Pneumonia, which frequently attacks the Cattle in the Arrondissement of Avesnes.

By M. Lecoq, *Assistant-Professor at the Veterinary School of Lyons.*

There are few districts in the arrondissement of Avesnes where more cattle are fattened than in that of Soire-le-Chateau. The farmers being unable to obtain a sufficient number of cattle in the district, are obliged to purchase the greater part of them from other provinces; and they procure a great many for grazing from Franche Comté. The cattle of this country are very handsome; their form is compact; they fatten rapidly; and they are a kind of cattle from which the grazier would derive most advantage, were it not that certain diseases absorb, by the loss of some of the animals, the profits of the rest of the herd. Amongst the diseases that most frequently attack the cattle which are brought from the north, there is one very prevalent in some years, and which is the more to be dreaded, as it is generally incurable; and the slaughter of the animal, before that he is perceptibly wasted, is the only means by which the farmer can avoid losing the whole value of the beast. This disease is chronic pleuro-pneumonia. I shall first describe the symptoms, and then endeavour to discover the causes of this malady, and also notice the lesions which are perceptible on the post-mortem examination of the animals, and discuss the mode of treatment made use of to combat it.

Symptoms.—The symptoms are scarcely recognizable at first, and the beast is frequently ill a long time, without its being perceived: he fattens kindly, but when he is slaughtered the owner is often astonished to find scarcely half of the lung capable of discharging its function. When, however, the ox has not strength of constitution thus to resist the ravages of disease, the first symptom that is observed is diminution and irregularity of appetite. Soon afterwards a frequent and dry cough is heard, which becomes feeble and painful as the disease proceeds. The dorso-lumbar portion of the spine becomes tender; the animal flinches when that part is pressed upon, and utters a peculiar groan or grunt, which the graziers regard as a decisive sign of the presence of the malady.

Soon after this the movements of the flanks become irregular and accelerated; the act of respiration is accompanied by a kind

of balancing motion of the whole of the body. To these symptoms are added such extreme sensibility of the sides of the chest, that the animal immediately throws himself down if those parts are pressed upon. The elbows in many subjects become separated from the sides of the chest; the pulse is smaller than natural, and not considerably increased, and the movements of the heart are not sensibly accelerated: the muzzle is dry and moist alternately; the animal lies down as when in health, but rumination is suspended. The fæces are harder than they should be; the urine undergoes no change. The mouth is often hot, but the horn and ears retain their natural temperature.

This first stage of the disease sometimes continues during a month or more. If the termination of the complaint promises to be the recovery, or, at least, the apparent recovery of the animal, the symptoms gradually diminish; the appetite returns, and the beast begins to gain flesh. The proprietor should then make haste to get rid of the animal; for it is very rare that the disease, however it may be palliated for a time, does not return again with more intensity than ever.

In most cases the disease continues to pursue its course towards its fatal termination, every symptom gradually increasing in intensity. The respiration becomes more painful; the head is protruded; the eyes have a peculiar clearness; every expiration is accompanied by a grunt, and a kind of puckering of the angles of the lips; the cough becomes lower, more suppressed, yet more painful; the tongue protrudes from the mouth, and a frothy mucus is abundantly discharged: the breath, before devoid of smell, becomes offensive; a purulent fluid of a bloody hue escapes from the nostrils; a profuse and fœtid diarrhœa usually succeeds to the constipation: and the animal, worn to a complete skeleton, and still more weakened by having eaten nothing for many a day, lies down to rise no more.

Opening of the carcass.—On post-mortem examination very slight traces of inflammation of the intestines are visible: the liver is discoloured; and the substances contained in the manyplus are dry and hard. The principal disorders are those of the thoracic cavity: the lungs adhere to the sides and to the diaphragm by numerous bands, evidently old and very firm. The substance of the lung often presents a reddish grey hepatization throughout its whole extent, and in which the cellular interlobular tissue, hardened and turgid, forms numerous yellow bands. At other times there are numerous tubercles in every state of hardness, and some in that of suppuration. That portion of the lung that is not hepatized is red and gorged with blood. The bronchial ganglions have become greatly enlarged, and also contain tuber-

cles. Beside the old adhesions, many false membranes are found, which, although thick, are of recent date. The pleura is not much reddened, but its thickness in some points, the adhesion at others, and frequently the effusion of a serous fluid, sufficiently prove that it has participated in the inflammatory action. The trachea and the bronchi are slightly tinged with red on the exterior, and the right side of the heart is gorged with blood.

In a subject in which, during life, I could scarcely feel the beating of the heart, I found the whole of the left lobe of the lung adherent to the sides, and completely hepatized. In another that had presented no sign of disease of the chest, and that for some days before its death vomited the little fodder which he could take, the whole of that portion of the œsophagus which passed through the chest was surrounded with dense false membranes, of a yellow hue, varying from light to dark, and being in some parts more than an inch in thickness, and adhering closely to the muscular membrane of the tube, without allowing any trace to be perceived of that portion of the mediastinal pleura on which this unnatural covering was fixed and developed.

Causes.—It is difficult to discover the real cause of this disease. The graziers imagine that the animals bring it with them from their native country; and the traces of chronic disease that are found in them when they are slaughtered soon after their arrival singularly confirm this opinion. It is well known that cattle which have been worked hard are often attacked by diseases of the chest, that are not got rid of without leaving some interior lesions; and the breeders know their interest too well not to get rid of those animals as soon as possible that have been affected with complaints of the chest. The manner in which the journey is performed contributes much to revive the old disorder; and I am confirmed in this idea, when I see that the cattle bred in the district, and which are not worked, are rarely, if ever, attacked by this chronic pleuro-pneumonia.

Other circumstances also contribute to support this opinion. The cattle purchased in Franche Comté are brought to Avesnes at two periods of the year—in the autumn and in the spring. Those which are brought in the autumn are much more subject to the disease than those which arrive in the spring; and it almost always happens, that the years in which the disease shews itself most generally are those in which the weather was most unfavourable while the cattle were on the road. The journey is also performed by two different routes—through Lorraine and Champagne; and the disease frequently appears only in the cattle that have arrived by one of these routes. The manner in which the beasts are treated, on their arrival, may contri-

bute not a little to the development of the malady. These animals, which have been driven a hundred leagues in bad weather, and frequently half starved, arrive famished, and therefore the more fatigued, and the greater part of them lame. Calculating on their ravenous appetite, the graziers, instead of giving them wholesome food, make them consume the worst that the farm contains—musty and mouldy fodder; and it is usually by the cough, which the eating of such food necessarily produces, that the disease is discovered and first developed.

Treatment.—The treatment of chronic pleuro-pneumonia consists, first, in mild and nourishing food, and not in a restricted diet, which can only augment the weakness of the animal, and thereby accelerate his death. Green meat should be given when it can be procured, as it may soften the hardened matters contained in the manyplus, and which are found in almost all the internal diseases of ruminants. Mucilaginous or acidulated drinks given in large quantities will have the same effect; and whey, which is generally abundant on farms where cheese is made, may be given with advantage. Bleeding is seldom indicated; but if the state of the pulse should seem to require it, very little blood must be taken at once; small bleedings, however, may be occasionally repeated. I have seen bleeding hasten the death of the animal. If any thing can be of service to the beast in this case, it is rowels. They should be employed to a great extent, and in an early stage of the disease; but before making use of them, the practitioner ought to be certain that the owner means to continue the medical treatment of the animal, as the swellings produced by the setons and rowels will, in all probability, prevent the butcher from buying it. Emollient injections, dry rubbing, and warmth, are the most useful auxiliaries that can be employed.

Notwithstanding all these means, it is seldom that a beast is saved; nor is that suprising, considering the numerous adhesions which were formed between the lungs and the sides of the chest before the animal began to exhibit any symptom of illness. It is always preferable, when the beast is not too thin, to sell it to the butcher before the process of emaciation is thoroughly established; by this means some part of the price of the ox is recovered, and the expense of a long and generally unsuccessful treatment saved.

Out of about thirty cattle which I have had under treatment for this disease, two only were apparently cured, and got into condition, and one of them died suddenly a few days after it was sold.

Contagion.—Is chronic pleuro-pneumonia contagious? The

farmers believe that it is, and I am partly of their opinion. When an animal falls sick in the pasture, the others, after his removal, go and smell at the grass where he has lain, and which he has covered with his saliva; and after that new cases succeed to the first. It is true that this fact is not conclusive, since the disease also appears in a great number of animals that have been widely separated from each other. But I have myself seen three cases in which the cattle of the country, perfectly well before, have fallen ill, and died with the same symptoms, excepting that they have been more acute, after they have been kept with pleuritic cattle. This circumstance inclines me to think that the disease is contagious, or, at least, that, in the progress of it, the breath infects the air of a cow-house in which there are other animals already predisposed to the same disease. I am also induced to believe that most of the serious internal diseases are communicated in this manner, and particularly those which affect the organs of respiration when the animals are shut up in close, low, and badly ventilated cowhouses.

Rec. de Méd. Vét. Mai, 1833.

On White Tumours of the Joints.

By M. Jacob, *V.S.*, 11*th Dragoons.*

We designate under the name of white tumours of the joints those enlargements, slow in growth, hard to the touch, and that are situated in the soft parts which go to form the articulations, and in the parts that surround them. Sometimes these parts only are diseased; at others, the bones and articulating cartilages are also affected. The disease usually appears in the ligaments, and thence is propagated to the synovial membranes and the bones.

These white tumours are produced either by exterior causes, or they are the consequences of rheumatic affections, or succeed to articular inflammation, caused by over-work; particularly when that work is prematurely exacted from the animal. Their development is comparatively slow compared with that of phlegmon; and there is no symptom of acute inflammation.

When a white tumour is dissected, there is found, successively, the healthy skin, a layer of cellular tissue immediately underneath slightly infiltrated, and which infiltration gives it an appearance of greater thickness. Underneath this first layer is found another, infiltrated by a clear yellow fluid; near the ligaments the cellular tissue is perfectly indurated; it creaks beneath the scalpel. The articular ligaments are infiltrated with a fluid of some consistence, and which is sometimes gelatinous. The arti-

cular capsules are red, and often much thickened. Sometimes the extremities of the bones are diseased; and then they are increased in bulk, and softened; the bony tissue is yellower, as are also the cartilages.

In general, the weaker the horse is, the more serious is this disease; the older the lesion, the more difficult it is to cure. It may terminate in anchylosis.

Treatment.—Rest of the diseased part, so that the lesion shall be accompanied by as little pain as possible; but, afterwards, some motion of the joint must be induced, lest the affair should terminate in anchylosis. If there should be any symptoms of intense irritation, recourse must be had to the antiphlogistic treatment. Usually, during the six or eight first days, general bleedings are practised; sometimes local bleedings are used, as, for example, from the coronet, when the tumours are situated in the inferior articulations of the limbs. Local fomentations, emollient poultices, and vapour baths, are very serviceable. Great benefit is sometimes found from the employment of sedative herbs as poultices; also from the use of laudanum, united with emollient poultices. The animal should put on a more or less restricted diet, according to the nature of the case; and if purulent collections are formed in the body of the tumours, they should be opened in time.

If the tumours are of long standing, and are accompanied by some pain, it is useful to bleed at the commencement of treatment; and then to have recourse to an equable and moderate compression, in order to avoid all the accidents attending too great a compression.

Should these first means prove fruitless, blisters should be tried; but they must be used with very great precaution, to prevent their producing too acute an inflammation, which would require to be afterwards combatted.

The blisters should be repeated every four or six days, and rendered more or less stimulating, according to the state of the tumour. The last remedy which should be tried is the moxa, each pledget of which should be about the size of a sixpence, and the applications should be renewed every five or six days.

If by the use of the blisters or the moxa the tumours are diminished or softened, compressions should be resorted to, taking care to protect the wounds by covering them with fine tow and ung. populeum.

The treatment should be terminated by frictions with ointment of hydriodate of potash, with the interval of a few days between each; camphorated and ammoniacal liniments may afterwards be used.

CASE I.

On the 15th of May, 1832, a sorrel-coloured mare, about seven years old, and of a lymphatic temperament, was brought to me: she had on the right knee a white tumour, complicated with caries of the bones. The disease had existed for several months; several cold abscesses were formed in the tumour: they were opened; a purulent flaky pus escaped, which carried with it little splinters of bone that came from the carpus.

These abscesses were opened three times; in spite of which the tumefaction, the softening, and the caries still continued, with considerable enlargement of the soft parts. I did not conceal from the proprietor the unfavourable state of the animal, and that I regarded the disease as beyond the reach of medical art. He would not have her destroyed, and persisted in continuing the treatment. I was obliged to make some large incisions and counter-openings, and to lay the bone bare, in order to get rid of the purulent matter. I afterwards covered the wounds with tow, soaked sometimes with emollient liquids, and sometimes with styptics.

The 2d of June: the disease still continues, but is not so serious.

The 27th.—The swelling has passed into a state of induration. There are two fistulæ formed; one on the posterior and external, and the other on the internal part of the knee. On probing them, they reached to the bones, which were evidently carious; and a greyish coloured pus was discharged, sometimes mingled with small pieces of bony matter. She appeared to suffer very little pain. I once more advised the owner of the mare to have her destroyed, but he persisted in his refusal.

On the 4th of July, her food was diminished one-half; the diseased part was covered with emollient poultices; and a little blood was taken from the radial vein.

On the 6th, the suppuration was not so abundant, and a slight softening of the part was observable.

On the 12th, she was bled again, and the emollient poultices were continued.

On the 23d, there remained but a very slight enlargement, and no suppuration; the fistula on the inside was entirely cicatrized, but that on the outside still remained open. I ordered it to be injected twice a-day with aromatic wine and sulphate of zinc. The suppuration gradually diminished, and the fistula healed. It was alternately rubbed with iodine ointment, and syringed with cold water. During the last fortnight of August

the animal began to work a little; and early in September she was no longer lame.

CASE II.

A black horse, about nine years old, sixteen hands high, of a lymphatic temperament, had had, for some months, a white tumour on the right fore leg, which made him go lame after taking any exercise. On the 4th of August, 1822, the right leg was twice as large as the left; the tissues were very hard; the action of the limb very limited: there was some heat, and very acute pain. On the slightest pressure of the part the animal attempted to bite.

I ordered complete rest, emollient poultices on the part; took away three pounds of blood, and lowered his diet.

On the 9th, I abstracted two pounds of blood.

On the 10th, the swelling was not so great; the pain was abated.

These symptoms were continued to the 18th or 19th, when I bled from the coronet, and continued the poultices.

On the 23d, there was great amelioration of symptoms.

On the 26th, I continued the same treatment.

On the 27th, bathed the part with emollients, and that until the 2d of September; the leg was then very slightly enlarged.

On the 3d, the part was much softened; and I continued the bathings and poultices until the 15th.

On the 18th, I commenced exercising him a little every day.

On the 25th, I used hydriodate of potash as a friction, and syringed the part with cold water; and in the first fortnight in October the horse ceased to go lame, and returned to his usual work.

Journal Theor. et Prat.

Inflammatory Swellings on various Parts (Affection Charbonneuse).

On the 5th of July, 1829, the hind limbs of a fine horse, about nine years old, suddenly became very much swelled, without any visible cause. He was restricted in his diet, and several clysters were given him.

On the 6th, the swelling of the hind leg was increased, and extended to the testicles and the sheath. On the morning of the 7th, the farrier bled the horse, and inserted two rowels in his brisket. They caused great swelling, which extended all under the breast. The rowels were then removed; and it was at this time that I saw the horse.

He was dull, low, and could scarcely walk; the pulse was small and frequent; the swelling enormous, and reaching under the belly: the testicles and the sheath were very much enlarged. The parts were very hot, and rather painful. The enlargement of the hind limbs had entirely disappeared.

Extensive scarifications on the swelled parts caused the effusion of about eight pounds of blood. Lotions, on these parts, of chloride of lime diluted with water (six ounces of chloride to a pail of water), were applied externally and internally; mucilaginous drinks were given, sweetened with honey and acidulated with eau de rabel.

The 8th.—The enlargement of the breast has rather augmented; the pulse was stronger, and not so frequent; the other parts are not more tumefied.

The scarifications made yesterday were cauterized; the under part of the belly and chest was fomented with water strongly acidulated with sulphuric acid, as were the testicles. During the day I gave the horse two drinks, each composed of six ounces of acetate of ammonia, and two ounces of Peruvian bark, in a pint of mucilaginous decoction; also gargles of an emollient decoction, sweetened with honey and acidulated with eau de rabel. During this day the tongue became tumefied, and of a violet colour. In the evening I made several scarifications, from which however very little blood flowed, and afterwards I bathed them with chloride of lime diluted with water.

The 9th.—During the night an enlargement appeared at the end of the muzzle and on the lips. They were lightly scarified, and afterwards cauterized. The lotions of sulphuric acid and water were continued on the testicles. Portions of the mucous membrane of the tongue became detached from the inferior side of the loose part. The animal opened his mouth with great difficulty, and it was almost impossible to make him swallow any liquid. Emollient gargles were continued. During the day the inferior part of the head swelled so much that the animal was almost suffocated. The operation of tracheotomy was performed.

The 10th.—The end of the muzzle continued to be much swelled; the pulse was small, and rather quick, and it was impossible to open the mouth; the animal voided a little loose dung. Emollient gargles were ordered, with clysters of barley meal and nitrated water, alternately with clysters composed of a decoction of gentian; the swellings were also bathed with lotions of chloride of lime and water.

The 11th.—The pulse was weak and frequent; the swellings on the testicles and breast were sensibly diminished; that at the end

of the muzzle was not so large. The animal voided his urine easily; the urine was slightly coloured; no solid excrement was voided. Emollient gargles were given, and the same clysters continued: pledgets of tow, soaked in chloride of oxide of soda, almost pure, were introduced into the wounds.

During the day the end of the muzzle diminished very considerably, so that in the evening the animal was able to take a little water whitened with barley meal.

The 12th.—The swelling at the end of the muzzle was quite dispersed; the animal was lively, and tried to eat; the pulse was small, and rather quick; portions of the mucous membrane of the mouth came off. The enlargement of the testicles had disappeared, and that of the breast was diminished. Liquid excrements, of a very bad smell, and in small quantities, were voided. The wound in the trachea was of a greenish colour. The tube was taken out. Pledgets of tow, soaked in chloride of oxide of soda, almost pure, were placed in the wound. The same treatment continued.

The 14th.—Much amelioration of all the symptoms; the swellings every where had disappeared. The sloughs of the cauterized parts detached themselves, and, underneath, a healthy suppuration had taken place; the wound on the trachea also looked better. Liquid execrements, tinged with blood, were voided. The former treatment continued.

The 15th.—Same symptoms; the excrements were rather firmer, but still tinged with blood. The wound in the trachea was much healthier. Gave four ounces of castor oil in a mucilaginous decoction.

The 16th.—The animal had some slight attacks of cholic, which yielded however to frictions of the belly, exercise, and emollient clysters. The wounds are healing.

The 17th.—The horse continues to get better; the excrements are no longer tinged with blood. Gave eight ounces of castor oil.

The 18th.—The horse still improving; the wounds are nearly healed. The food is increased in quantity and quality, and a little hay was given. At the end of a month the horse was quite well.—E.

Journal Theor. et Prat.

Miscellanea.

The Horrors of Horsemanship.

Well, thank Heavens and Mr. Gurney, locomotion will soon be conducted on less perilous principles, and steam will supersede

the functions of that most terrific of all animals, whether bipeds, quadrupeds, or centipedes—the horse. O how delightful it will be to ride on a charger which can neither bite, or kick, or start, or rear, or run away!—unless you fancy it. What comfort thus to bestride, as it were, an ambling tea-kettle, or a bubbling but docile boiler, instead of that wild, capering, self-willed monster, whose chief pastime appears to be to give his rider as much uneasiness as he can whilst he carries him, and to fling him from his back as soon as he finds a convenient opportunity. Commend me to a horse of *metal*, if you will—but then it must belong to the mineral and not the animal kingdom. I should have no objection to the tea-kettle prancing or capricoling, if I myself, as would be the case with that amenable steed, were the originator of those frolics, and could put an end to them in a moment of my own free-will, whenever my Pegasus became too hot and spirited, by the curb of a safety-valve. Nay, perhaps I should fancy to disport myself sometimes in Hyde Park (I do not think I would venture it in the streets), and would, like other Nimrods, feel an anxiety to exhibit my kettlemanship and chivalry in the eyes of the fair. But, indeed, this desire for display is childish; and I would seek to restrain it, as far as the hot blood and impetuosity of youth, its disregard of danger, its thoughtless adventurous, daring, though generous and gallant spirit, would allow me. The legitimate object of riding, whether blood or steam give vigour to the horse, is locomotion, or the safe and perhaps speedy transference of our persons from place to place. Certain modifications of this principle may be looked upon as embellishments; but sure I am, that whilst they do not tend to enhance velocity, they signally contribute to the amount of risk.

Riding is with me one of the trials of life, and yet I occasionally undergo it; for, strange as it may appear, I have the greatest repugnance—a repugnance that even surpasses my dread of horses—to be thought an inexperienced equestrian, much more a timid one. My solicitude is ever on its guard to conceal my infirmity; and if my name were attached to this avowal of it, I think I should never survive the disgrace. Therefore, though I hold the quadruped which is the hero of these pages in utter abhorrence, I always, when in company with strangers, and the subject is introduced, feign a partiality for the brute—talk learnedly about spavins, sand-cracks, wind-galls, lampas, &c.: sometimes also join the tribe who visit the stables; nay, in order to sustain my assumed character, venture to approach the animals, pat them, &c. Before, however, proceeding to this pitch of temerity, I take care to select the horse which seems the most quiet, and even then, in bestowing upon him my dissembled

caresses, endeavour to take up a position which shall be a golden mean between his head and his heels. Whether it be from awkwardness on my part, I know not, but I don't think I ever attempted to fondle the ungrateful beasts, that they did not exhibit tokens of displeasure. A diminutive starveling of a little pony, that I once singled out as the object of my favours, absolutely squealed and kicked at me the moment I put my hand on him. The people in the yard called him "Tom Testy;" and to them Tom's obliquity of temper seemed, like the whims of a privileged oddity, only to furnish a source of entertainment. These things never amuse me. Sensibly aware, however, of my equestrian deficiencies, I have made many attempts to remedy them. At one time I took the matter in hand seriously, and went so far as to practise every day for a whole week on the back of Simon Slug, an old horse of my father's, which had been in the family for a quarter of a century—a quiet, plodding, dozy old brute, who moved as if he were made of wood, and seldom went out of a jog trot. Yet I never got on Simon's back without some feeling of perturbation; and, in course of time, Simon perceived it, though, in candour I must own, the only advantage he took of his discovery was to choose his own gait and his own road. The gait he usually selected was his favourite jog, and the road, the shortest way home. For the first day or two I contended with Simon's domestic propensities, and by dint of coaxing—nay, threatening—I really ventured to have recourse to menaces—forced him past his favourite turn; but on the third day, whether it was that the flies were unreasonable, or that "home, sweet home," came more vividly over his recollections, I know not; all that I know is, that when I endeavoured to lure him on my way, he evinced his total insensibility to my blandishments, by doggedly standing stock-still; and when, adopting more vigorous measures, I ventured practically to insinuate that I held not the whip in vain, he absolutely shook his ears, and backed with me. "O, have it your own way—have it your own way," said I, agitated with fright, and without again attempting to use the slightest coercion, but, on the contrary, trying every method to mollify and appease him, I became implicitly subservient to his will. Simon having gained his point, seemed perfectly satisfied, and jogged home the short way, which brought us to the stable yard in a quarter of an hour after we had set out. Thus was I tyrannized over for three days running: I then gave the matter up as a hopeless case, and left Simon Slug to enjoy his *otium cum dignitate* in the paddock, without any further disturbance. But the most unfortunate passage, perhaps, in my life, as connected with this portion of the animal kingdom, took

place a few days ago; and it is the irritability of my feelings, still writhing under the influence of the chagrin and vexation experienced on that occasion, which have, it may be unadvisedly, impelled me thus to avow and record in black and white my downright and unqualified horror of horsemanship. I happened to go last Thursday on a visit to a friend of mine, who lives in the country. There were several guests beside myself. On the morning after I arrived, whilst we were at breakfast, M., whose study it is to make his house pleasant, asked, half singing in his burlesque manner the words of Moore's melody, "Well, what shall be our sport to-day?" Various pastimes and methods of "killing the enemy" were proposed. Some were rejected, others ratified; but what was my alarm, when, upon settling the "order of the course," I heard that I was to form one of the equestrian party.

The party presently rose. The ladies were equipped with the most unaccountable alacrity in their riding habits. Presently we heard the tramping of hoofs, and the "clearing off," which horses generally indulge in when leaving the stables; sounds awful to my ears. I began to get a little faint. "Equestrians, turn out," said M. "Come," addressing me, "have you your spurs on? You must wear a pair of scythes on your heels to make 'Big Sam' go on." I retired to my room for a few moments, apparently to get my spurs (I never dreamt of wearing those frightful weapons, more fatal in my eyes than sword or pistol), but really to tranquillize the palpitation I found rising in my bosom. A few moments were all that were afforded me for this purpose. The servant soon knocked at my chamber door—"Horses are waiting, sir." I marvelled at his unperturbed air. He appeared to mention quite an ordinary occurrence. "Very well," said I, calmly; and putting on my hat, and, at the same time, all the mock fortitude I could muster, I followed the servant down stairs, endeavouring the while to still the tumults of my breast, and singing with as nonchalant an air as my trepidation would allow—

"He loves and he rides away."

"Come, we wait for you," said M.; "while you are singing, time flies."

"And he leap'd on the courser's back,"

continued I, quavering.

"Do, then, leap on your courser's back," said M., pointing to a huge black monster with an arched neck, like one of the Apennines; a ponderous carcass, which resembled a newly discovered continent, and legs!—simile does not furnish me with an illustration of sufficient capacity to describe his legs.

"You had better get a step-ladder, Mr. B.," said Miss L., who, by-the-by, is, I think, rather a pert and interfering person. I was obliged to force a smile. It was, I am afraid, an abortive one; my features soon resumed the cast suited to my sad situation.

"Farewell," said I, wringing my uncle's hand. He happened to be one of the party, and was standing on the hall-door steps. "Farewell"—and I pressed his palm between both of mine. I never felt my bowels yearn more towards my uncle than at the moment. He is a little, red-faced, choleric man.

"Why, boy, you are squeezing my rheumatic finger," said he, pettishly.

"Come, B., come," shouted M. The horses began to get uneasy at being held in so long, and exhibited rather more eagerness than I did to be off. "Evil communications corrupt good manners," and my Mammoth, among the rest, began also to make some unwieldy demonstrations of impatience.

"I am quite ready," said I, with feigned alacrity; and I prepared to mount.

"My dear fellow, is it at that side of your horse you mount?" said M.

"Oh," returned I, with great presence of mind, glossing over my blunder, "it is a perfect matter of indifference to me which side I mount." I however went to the right one. "Hold him tight—ahem!" said I, in sotto voice to the groom, the injunction being perfectly distinct notwithstanding a clearing of the throat, and a half appearance of unconcern which accompanied it. What with my awkwardness, and Big Sam's unaccommodating spirit, I am sure three minutes fully elapsed before I got into the saddle, the groom having (as, I believe it is, Ariosto says) got "more kicks than halfpence" from me, whilst I unskilfully endeavoured to place myself athwart my charger.

"Well, is all right?" said M.

"Yes, replied I, with desperation, both hands grasping the reins, and my feet driven up to the heels in the stirrups; "all right."

"Onward then,"—and on he went, I keeping in the rear as far as Sam would allow me; for, fired by a very troublesome emulation, he ambitioned the foremost rank. I at length succeeded in getting him to walk beside one of the party, who being a gentleman of a certain age, was more staid and discreet than the rest of the bevy. We went along pretty smoothly. Sam now and then startled me by a loud neigh like an earthquake, and by occasionally throwing up his head; but on the whole his demeanour was tolerably tranquil. Though my position was far

from being an easy one—though I was thoroughly conscious of the insecurity of the tenure by which I held it, still I was, comparatively speaking, relieved from immediate apprehension, and was beginning to indulge the hope that all might yet we well, when M. called out, "Now for a smart trot."

"O Lord!" said I, involuntarily, and on we trotted.

"You are riding faster than your horse, sir," said my elderly companion, in a satirical tone.

"Bless me, Mr. B.!" said the volatile young lady, "you are very active. Why, you rise so high in your saddle, I think every moment you will hit your head against the clouds."

"This ho-rse tro-ts ve-ry high," uttered I, in broken accents, as I best could, the huge beast I was riding throwing me up and down in the most unmerciful manner. I all but lost my stirrups twenty times, and had to hold by the pummel constantly. It was a broiling day: my face became like a furnace through exertion and fear. These sufferings, at the same time, were intensely aggravated by my overhearing the grooms, who rode behind, laughing and enjoying the exhibition I was very unwillingly affording them. My companions, I perceived also, with I believe the exception of M. himself, began to suspect the true state of the case. At length we drew up for a few moments: it was, however, but a short respite. "Open the wicket," said M. to the grooms, "that we may get on the sod."

The groom did as he was ordered.

"I'll wait on the road for you," said I, puffing and blowing, for I had a wholesome dread of the sod.

"Oh," said he, "we are not coming back this way; we proceed through the fields. Come along."

"Now," thought I, "for the trial." I walked Sam in as quietly as I could, and practised a thousand frauds in order to keep him perfectly placid. I allowed him to put down his head and nibble a little grass. "Perhaps," thought I, "horses may have gratitude."

Presently one of the young ladies of the party began to urge on her steed into a quicker pace. "Now for a gallop," said Miss L.

Immediately all the horses began to shew that restless spirit which usually seizes them when one of their species exhibits any sign of accelerated motion. Sam happened at this time to be absorbed with his nose in a rich bunch of clover; for anticipating the "*mouvement*," as the French politicians say, I had no longer confined him to an occasional nibble; but hoping to draw off his attention from the transactions of his neighbourhood, had given him license to feast himself *ad libitum* on the dainties with which he was surrounded. But, notwithstanding all my pre-

cautions, Sam soon got a sidelong glance of the antics which the rest of the brotherhood were enacting, and the *esprit de corps* wholly overcoming his passion for clover, he forthwith commenced practising the same evolutions. It was just as if St. Paul's Cathedral was dancing under you. I did every think I could to moderate his transports: patted him whenever I could spare one hand from the reins—called him "pretty Sam"—he nevertheless got more intractable. I now prodigally lavished every possible term of endearment upon him, pulling in the bridle at the same time with all the muscular force I was master of. He went round and round with me; snorted, pawed the ground, rose on his hind legs. "Good boy—monster—fine fellow—O misery!—nice Sam—pretty little Sam"—and off he goes in a gallop! I fly on the wings of the wind, both arms embracing his neck—I could not see whither I was going—I passed near my party, for I caught their voices, and distinctly heard all saying, "As I live, that old brute is running away with B."

After this I became insensible. I have since ascertained that in crossing an immense ditch, my tyrant threw me, and that I was taken up by the party. Shall I go on? No. I will not add another word, except merely to say—you may rest assured, I will never get on big Sam's back again, or that of any other horse that ever breathed the breath of life!

Metropolitan.

A WEST country barrister having purchased a horse at Tattersall's, remained to see how the others went off; after staying some time, in the course of which a dozen horses had been knocked down to him, a friend came up and said,—"Halloo!—what a —— of a lot of horses you have bought! I suppose you are going to horse the mail?" The barrister declared he had purchased but one; the auctioneer, on the other hand, was equally sure he had winked to him at every lot: an explanation ensued, when it was found the barrister had the infirmity of continually winking one eye; and hence this laughable mistake.—*The Sporting Magazine.*

TO CORRESPONDENTS.

THE continued illness of the resident Editor must again be accepted as an apology for apparent inattention to one or two correspondents.

Those of our readers whom it may concern are once more reminded of the open dinner of the Veterinary Club at the King's Arms, Bridge Street, Westminster, on Thursday the 12th inst., at five o'clock. No individual invitations will be issued; but the Club will be most happy to see any of their brethren from town or country, and to extend far around that friendly feeling which should exist in the profession, and which is the charm of their periodical meetings.

Gentlemen who will honour them with their company on that day are requested to favour the Honorary Secretary, Mr. Yonatt, with a letter, on or before the 10th inst., directed to him, 3, Nassau Street, Middlesex Hospital.

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XXXVI.

The Brains of Domesticated Animals.

(Continued.)

In the following rapid description of the form and convolutions and structure, both external and internal, of the brain, I shall principally confine myself to that of the horse, briefly glancing at the points of difference as we pass along. It will, however, be, I fear, a most unsatisfactory detail, a mortifying proof of human ignorance. To very few of the internal irregularities and recesses and tubercles of this organ shall I be able to assign any definite function; and with regard to the great majority of them, I shall be compelled to confess utter ignorance. The common sensorium, the very seat of intelligence, is enveloped in mystery and darkness, through which human ken has not yet been enabled to penetrate.

The Structure of the Brain.—I am first struck with the manifest difference between the substance of the brain, and that of any other part of the frame. I can find little or no cellular texture within the brain. Although, after long maceration, and by the power of the lens, I can resolve the whole into a collection of fibres, the tissue which connects these fibres together still escapes my observation. There is no relative motion,—no relative change of place between the parts,—no elasticity required, and the interposition of any considerable quantity of cellular substance would not only be useless, but an evil. There is no interposition of adipose matter in the brain;—that would necessarily be connected with the existence of considerable cellular texture, and would either imply, or cause, a certain degree of motion between the parts of the brain; and, more than this, the adipose substance is most of all under the power of the absorbent vessels, and rapidly increased or diminished, according to

the healthy or diseased state of the frame. The accumulation or absorption of the adeps is a matter of little consequence elsewhere; but in sickness and in health the bulk of the brain must remain unchanged: there must be no increase of substance to press upon the origins of the nerves—there must be no loss of it to create a vacuum, or to produce engorgement, or, perhaps, rupture of the vessels.

The Chemical Composition of the Brain.—I find an apparently pulpy mass which has little interposed cellular or adipose matter. When I triturate this pulpy matter, I can form a perfect emulsion that will pass through the finest sieve. I coagulate it by heat or by acids, and I find that the coagulum is different from that which can be produced from any other similar substance; it consists of mingled albumen and oil, and with none of that which we almost regard as the principle of animal matter—nitrogen. In place of this, I discover something which no other part of the frame will yield—uncombined phosphorus; and this albumen and oil, with one-twentieth part of the various salts of potassa, sodium, lime, and magnesia, and one-sixtieth part of osmazome, make up the solid part of the brain. The cerebral mass is composed of one part of all these solids combined, and four parts of water. While, therefore, I trace to the brain a peculiar function, I find a peculiar composition. There seems to be little or no difference in the chemical composition of the cortical and the medullary parts. I have ventured to assign to them a difference in function; this theory, however plausible and interesting it may appear at present, and firmly as I may now be disposed to believe in it, may hereafter be discovered to be as untenable as that which assumed that the cortical portion consisted of a congeries of bloodvessels for the production and nourishment of the medullary part, whereas the latter had almost attained its full development before a trace of the former could be discovered. The microscope has also ascertained, that instead of the larger arterial branches being found in the cineritious, and their minute ramifications dipping into the medullary, the vessels of the medullary portion are considerably larger than those of the cortical. But I must proceed to the enumeration (it will be little more) of the tubercles, and cavities, and irregularities of the brain.

The Corpus Callosum.—Having stripped off the dura mater, and holding the hemispheres a little apart, I observe a white convex body occupying the bottom of the sulcus. It has the appearance of the crown of a compressed arch, and so it is: it is the central portion of the roof of two cavities, which I shall have presently to describe—the *lateral ventricles.* This is the *corpus*

callosum, or hard medullary body; it is of firmer consistence than the medullary portion of the brain generally. I can plainly see the direction of the sides or supports of this arch, and by a little dissection I can clearly trace them. The anterior support or pillar I can follow down to between the corpora striata; and the posterior ones are continuous with the fornix and the cornua ammonis. When I examine it more closely, I perceive that it is not only the roof of the ventricles, but a bond of union, or a connecting medium between the medullary matter of the superior part of the brain on each side. I make a transverse incision horizontally across it, and continued over the ventricle on each side, and I can see the fibres or bands of medullary matter, running from one hemisphere to the other: therefore it is that human anatomists call it *the great commissure*. Running along the centre of this body is a little depression or channel. It is occupied by one of the cerebral arteries, and is worthy of notice, as being the central line of the brain, and through which it might be divided longitudinally into two equal parts.

Is of different Size in different Animals.—This corpus callosum, or great commissure, is, as you will perceive, very different in size in our different patients. It is, as you may observe, a body or band of very considerable bulk in the horse. In the ox it is considerably smaller, smaller even in proportion to the size of the two brains. In the dog it is larger than in the sheep; it seems to bear a relative proportion to the development of the cerebral hemispheres. It increases in size in proportion to the rotundity of the brain and the intelligence of the animal, and is largest of all in man. It is developed in a direct ratio with the cerebellum in every animal, and also the tuber annulare and optic thalami, but it is in inverse proportion to the corpora quadrigemina and the spinal chord.

Not found in some animals.—The corpus callosum is said to be wanting in the hare, the rabbit, the rodentia generally, and in birds. There are no lateral ventricles in these animals of which it can become the roof, yet it exists in smaller size, as the commissure or bond of union between the medullary matter in the superior portion of each hemisphere. The fibres or bands running from one hemisphere to the other are more remarkable than where the corpus seems to have a double duty to perform.

The Septum Lucidum.—Either dropping from the under side of the corpus callosum, or rising from the fornix, are two medullary laminæ, partly united together by their interior surfaces, and called, from their semi-transparency, the *septum lucidum*. It is a medullary curtain let down between the lateral ventricles, and dividing them from each other, a communication between them

being left only under the arch of the fornix. An incision being made along the central sulcus, these laminæ are easily separated from each other; and between them is found a little fissure or cavity, called by some the *fifth* cavity, and by others the *fossa sylvii*. It usually contains a moisture or dew within it; but I have never seen the abundant serous fluid of which some have spoken.

The Fornix.—The fornix is now brought into sight; the French call it the medullary or cerebral triangle: there is an indistinct resemblance to a triangle, with one of the angles presenting anteriorly, and the other two posteriorly; its lower surface is toward the third ventricle, and is spread over the optic thalami; a beautiful vascular membrane is interposed between them, and the impression of the vessels of this membrane seem to be formed upon it;—this is the psalterium or harp, and on its upper surface rests the septum lucidum. Of its four irregular extremities or *crura*, the *anterior* or *inferior* ones may be traced from the corpus albicans—winding round the thalami—bending upwards behind, and becoming connected with the anterior commissure; then approximating towards each other, and, erroneously supposed to unite, forming the arch or body of the fornix within the ventricles;—the *posterior* or *superior crura* are prolonged into the hippocampi, and running along the crura of the hippocampi form the *corpora fimbriata*, by their thin fringed floating edges.

The Lateral Ventricles.—They are first observed when we are dividing the septum lucidum to demonstrate the fifth ventricle; and on reflecting back the roof we have their irregular shape and strangely-uneven floor fully exposed. The floor consists mainly of two convex, pyriform substances, and a central channel. That which appears outwardly and anteriorly is the *corpus striatum*. It may be said, indeed, to occupy almost the whole of the outer portion of the floor, being narrow posteriorly, and assuming a broad pear-like form anteriorly. It is covered by a lamina of medullary matter, so thin that the colour of the cortical substance beneath is seen through it. If this cortical substance is cut into, it presents an appearance more or less striated, differing in different species of animals, and often varying in animals of the same species; more evident usually in the herbivorous than the carnivorous animals, with the exception of those that hunt by scent. The striæ take a direction from above downwards, and from without inwards; and the broad extremities of the corpus striatum in each ventricle lying in approximation with each other, the striæ from each seem to unite under the anterior commissure. I have never seen the changing direction of the striæ which is spoken of in the human

being. The corpus striatum is visible again at the base of the brain, where it evidently becomes one of the origins of the olfactory nerve, as well as the commencement of the mammillary process. In the rodentia and edentata the corpora striata are much larger than they are in the carnivora, the ruminantia, or the solipeda. In the bird they are larger still, and the olfactory nerve plainly arises from their anterior extremity. The corpus striatum varies in form in the different species of birds, but in almost all of them it constitutes nearly the whole of the hemisphere.

The Hippocampi.—The convex body which occupies the inner and posterior portion of the floor is the *hippocampus*—narrower and more prominent than the corpus striatum, and consisting of cortical or striated matter, covered by a thicker lamina of medullary substance. As this body proceeds superiorly, outwardly, and presently downwards, and narrows as it goes, it assumes the name of the *crus hippocampi*, and it descends into a blind pouch or hollow—the superior cornu—where it ends in a distinct bulb, the *pes hippocampi*. In none of our domesticated animals have I observed the ventricle in the pes hippocampi which exists in the human being. The medullary covering is derived from the corpus callosum; the striated portion is obtained from the very centre of the hemispheres.

The Corpus Fimbriatum.—Along the side of the hippocampus, of considerable width anteriorly, and narrowing as we trace it posteriorly, is the *corpus fimbriatum*, of which I have already spoken, skirted by the plexus choroides, and partly covering it. It is the margin of the fornix prolonged. It enters with the hippocampus into the posterior cornu, and terminates acutely near the pes hippocampi.

The Plexus Choroides.—Occupying the channel between the hippocampus and the corpus striatum, we find the *plexus choroides*, a considerable collection of minute bloodvessels, both arterial and venous, enveloped in folds of the pia mater. It enters, or the arteries of which it is composed enter, the ventricle under the arch of the fornix, then taking a direction anteriorly, it speedily terminates in a kind of bulb; but, being reflected backwards, a portion skirts the whole edge of the corpus fimbriatum, and dips deeply into the superior cornu, where it also terminates, but rather acutely. After it has discharged some important office within the ventricle, the veins escape by the same opening; and those from the opposite ventricles uniting form the *vena Galeni*. There can be little doubt, I apprehend, with regard to the function of this plexus. It secretes the fluid contained in the ventricles. It is occasionally subject to disease; a

small enlargement is observed, and a gritty matter is not unfrequently detected in it; and sometimes the vessels appear to be agglutinated together, and an ovoid tumour appears considerably larger than an almond. Here are two extraordinary specimens; of the history of one I am ignorant—in the other specimen each plexus, when first taken from the brain, weighed nearly ten drachms; the ventricles were distended with serum, and the disease was marked by the principal symptoms of staggers.

Use of the Ventricles.—Much dispute has arisen with regard to the use of the ventricles. Even in the healthy living animal they contain some portion of fluid. If the horse is destroyed and the cranium opened as speedily as possible, serum is found in the lateral ventricles. Some physiologists have contented themselves with observing that the ventricles are merely cavities left in certain parts of the brain where irregular surfaces are opposed to each other; others as plausibly have imagined that they are formed by the foldings of the convolutions of the brain; while some have supposed that they were intended to preserve that full and perfect occupation of the cranial cavity which seems to be necessary to the safety of the brain in the natural motions of the animal. If a portion should be diseased and absorbed, the plexus choroides or the membrane of the ventricles may secrete a proportionate quantity of fluid; to which we may add these spaces left in the centre of the brain or filled only with fluid, are adapted to neutralize any concussion to which the brain may be exposed.

The Cornua of the Ventricles.—The channel running along the floor of the ventricle terminates posteriorly in a blind pouch leading downwards towards the centre of the brain, and in which are found the pes hippocampi, and the acute termination of the plexus choroides—this is *the superior cornu:* the *inferior cornu* is more complicated; is takes a direction also towards the base of the brain, and is continued even into the æthmoidal ventricle, which I shall have presently to describe. From the winding course of both these canals, the name of *cornua* has been given to them.

The Thalami Nervorum Opticorum.—Having turned back the posterior angle of the fornix, and lifted the interposed membrane or veil which is stretched beneath it, we recognize two white prominent bodies; they are broad and somewhat divergent from each other posteriorly, but they approximate as they proceed forwards, and gradually contract into two medullary bands, which wind round the crura cerebri, or accumulated mass of medullary matter below, and are the origins of the optic nerves: they will be more particularly described hereafter, and they are now cur-

sorily pointed out to you as illustrations of the origins of the sensitive nerves, deep in the centre of the brain. We observe considerable difference in the development of these tubercles: in proportion as the lobes of the cerebellum are enlarged, so are the optic thalami—in proportion as other tubercles, which I shall have presently to describe, are enlarged, the optic tubercles are diminished. When we cut into the thalami we find a considerable quantity of cineritious matter, as in all the other irregular prominences at the base of the brain.

The Commissura Mollis.—These thalami are united together by a medullary mass so soft and pulpy as to assume the name of *the soft commissure.* It yields to the slightest attempt to separate the thalami; in fact, it is a continuation of the cineritious matter under the medullary covering, and of which the thalami are composed.

The Tænia Semicircularis.—Between the thalami and the corpora striata, and partly concealed by the plexus choroides, we observe a singular tract of medullary matter running from the hippocampi down to the anterior commissure, and connecting together the posterior and anterior parts of the brain; as the anterior commissure from one corpus striatum to the other, and the posterior commissure above the commissure mollis connect together the sides of the brain. The use of all these links will be ascertained by some future physiologist.

The Foramen Commune Inferius.—There is a curious connexion between the cavities as well as the substance of the brain, of which we have here an evident proof. Observe this triangular-shaped hole below the soft commissure, and between it and the inferior one; it conducts to a sulcus between the thalami, formed by their divergence. We call it a ventricle, but it is nothing more than a little gutter, having the thalami, the fornix, and the velum, as its roof, and the crura cerebri as its floor. It is continued backward under the posterior commissure to a wider canal, the fourth ventricle, lying under the cerebellum, and having it as its roof, and the medulla oblongata as its floor.

The Infundibulum.— At the bottom of the anterior part of the third ventricle, and under the foramen commune inferius, is another funnel-shaped opening. It is comparatively large in the ventricle, but rapidly narrows, and conducts towards the pituitary gland, seated immediately beneath. Of its office, or rather that of the pituitary gland, I shall immediately speak.

The Pineal Gland.—Between the commissuræ mollis and superior, is another foramen, which leads down to the third ventricle, and would likewise form a communication between the lateral ones, and the third and fourth, if it were not closed by the velum

interpositum. Placed over this foramen, and between the thalami and behind the quadrigemina, is the *pineal gland.* It is a small pear-shaped reddish-grey body, enveloped in folds of the pia mater; and, not only by means of the pia mater, but distinct pedunculi proceeding from itself, connected with almost every neighbouring part, and also with some distant tracts of the brain. Its little peduncles are traced without much difficulty; they look like nerves proceeding from it. Observe them running over the thalami, and penetrating even to the crura of the fornix, and then consider with how many and how important parts of the brain these are connected. We term it a gland, for it is surrounded by a plexus of vessels, with which it is intimately associated, and which may be traced into and from it. Galen thought that it was the very seat of the soul; others have assigned an inferior office to it, namely, that of a manufactory or reservoir of serous fluid separated from the blood. I must honestly confess that I know nothing about it; but when I see it so connected, so curiously organized, and so securely defended, I am persuaded that it does discharge some important function, which a more fortunate inquirer may probably be hereafter enabled to develop. In the hare and rabbit it seems to be more decidedly vascular than in any other domesticated animal; and although I have not been able to find in the horse the gritty, sandy matter of which human physiologists speak, this is abundant enough in some of the ruminantia, and particularly of the deer kind.

The Corpora Quadrigemina.—Behind the pineal gland, the fornix, and the corpus callosum, are four eminences, the *corpora quadrigemina.* We know not their function, but it must be an important one, for they are the first portions of the medullary matter that appear. They are earliest seen in the form of two little tubercles, distinct from each other; by degrees a well-defined channel appears between them, and, at a still more advanced period of utero-gestation, a transverse line is discovered dividing each of them into two, and completing the *corpora quadrigemina.* They are important, however, in comparative anatomy, as unerringly pointing out the class to which the animal belongs.

The Nates and Testes, considered with reference to Comparative Anatomy.—The tubercles are divided into the *nates* and *testes,* of which you may perhaps form some idea from a reference to the following singular fancy of anatomists. They supposed this portion of the human brain to bear some resemblance to the posteriors of an hermaphrodite,—the vulva is the foramen commune anterius, the anus is the foramen between the soft and the superior commissures, and then the division of the tubercles will answer to the relative situation of the nates and testes; the

uppermost are the nates, the lower ones the testes. The transverse line is differently placed in different animals. In herbivorous animals it is placed lower, so that the nates are most developed; in carnivorous animals, it is found higher, so that the testes preponderate, and in omnivorous animals, as in the human being, the transverse line is nearly in the centre, and there is little difference in the size of the tubercles. The observation of these brains of the sheep, the dog, and the swine, will impress this on your minds. You need only to see the tubercula quadrigemina in order to decide on the character of the animal as designated by his food.

Proportion to other Parts of the Brain.—These tubercles present us with another lesson of comparative anatomy. Observe how much larger they are, compared with the bulk of the brain, in the ox than in the horse, and particularly how much more so than in the dog. Their development is in proportion to that of the optic nerve and the spinal chord, and in an inverse proportion to that of the tuber annulare. Connected with this, it is evident that, in proportion to the bulk of these tubercles, that of the cerebral hemispheres is diminished, or the animal principle preponderates over the intellectual. We have already seen, that the optic thalami bear also an inverse proportion to the tubercles. On these points of coincidence and of difference, we shall probably be hereafter enabled to found a rational theory of the functions of the various parts of the brain. In the hare and rabbit, and the rodentia generally, these tubercles have an extraordinary development. In these animals there are no lateral ventricle, and the quadrigemina are hollowed out to form lesser ventricles, that probably answer the purpose of the lateral ones in others. An incision into these tubercles will bring to view numerous faint striæ of cineritious and medullary matter. At the base of the testes is a medullary band or tract, which reaches as far as the optic thalami, and connects these prominences together; and also a medullary curtain or screen, somewhat resembling the septum lucidum, rises up, connecting itself with the crura cerebelli, and forming a kind of roof for the anterior part of the fourth ventricle.

The Crura Cerebri.—I now turn to the base of the brain, and there I observe in every domesticated quadruped the great preponderance of medullary matter. I can distinctly trace three lobes on each side; on the two anterior or inferior ones, I recognize the mammillary processes resting upon the æthmoid bone, and abutting upon the cribriform plate of the same bone, and also the distinct and largely-developed bulk of the olfactory

nerves. In the middle lobes, resting upon the same bone, I observe the ovoid projection of the corpora striata, and the origins of the olfactory nerves from them; and my attention is more particularly directed to the *crura cerebri*, or condensation of the medullary matter of the base of the brain. They are large white chords or pillars, beginning to appear opposite to the anterior portion of the corpora striata, and pursuing on each side a direction inwardly and posteriorly towards each other. They contain some grey and dark-brown-coloured cineritious substance, in flakes and in masses, but no longer in striæ. The crura, resting upon the wings of the sphenoid bone, gradually approximate, and a little before their point of union there is interposed between them a small round medullary body.

The Corpus Albicans.—When I say a small round medullary body, I am describing the *corpus albicans*, as it exists in the horse and in all ruminants and herbivorous animals. In the omnivora and the carnivora it is divided into two. This is another lesson of comparative anatomy. The corpus albicans is placed immediately posterior to the lower opening of the infundibulum. It would seem half to surround it, as if by its elevated edge to turn away, and direct to the anterior portion of the base of the brain, any fluid that might descend the infundibulum. But of this we know nothing.

The Pituitary Gland.—Placed immediately under the lower opening of the infundibulum, and separated from it by a lamina of dura mater, is the *pituitary gland.* This is a dark-reddish body of a compressed circular form, occupying the sella turcica of the æthmoid bone. It is flat inferiorly, and convex towards the brain, and has every appearance of a glandular structure. The profusion of arterial vessels around it is almost incredible, and veins have been clearly traced from it into the cavernous sinuses on each side. Being placed immediately under the infundibulum, we are naturally induced to trace some connexion between it and this apparent funnel-shaped passage, and likewise the other sinuses with which it communicates; but there has been no anatomical proof of this: it has never been shewn that the lamina of the dura mater is actually pierced, nor has any channel been pointed out through which the moisture so derived might be conveyed away. The pituitary gland has rarely seemed to be affected by any disease in the ventricles, or accumulation of fluid there. Here, again, we must confess our utter ignorance. There is no difference in the construction of the pituitary gland in different animals, except that it seems to be proportionally larger in them than in the human being, and large in proportion to the quantity of medullary matter; while these specimens will shew

you that it varies materially in bulk in animals of the same species.

Immediately anteriorly to the pituitary gland, the tractus optici cross the crura cerebri, and creep into sight from under the corpora striata, in order to form the optic nerves, with which indeed they are continuous.

Posteriorly to the pituitary gland, the crura cerebri are found in perfect approximation, and so they proceed to the tuber annulare, giving out in their way the third pair of nerves. At the tuber they are joined by two large medullary chords from the lateral lobes of the cerebellum; but the nature of the union which there takes place cannot be understood until we have inquired into the structure and function of the cerebellum.

EXTRACTS FROM MY CASE-BOOK.

No. VI.

By Mr. W. Simpson, *V.S., Southampton.*

PARTURITION.

June 15, 1832.—A spaniel bitch was brought to my infirmary to-day, which has been in great and constant pain since yesterday, making repeated but fruitless efforts to expel her pups. She is in a very plethoric habit of body; her bowels are stated to be in a confined state; and she exhibits some general symptoms of febrile derangement, arising, doubtless, from her protracted labour. This is her first litter. Upon examination *per vaginam* no fœtus could be felt.

Ordered to have a warm bath, and to take a dose of mist. e ol. ricini morning and evening.

16*th*.—The bitch appears in precisely the same state as yesterday, save that the medicine has operated freely upon the bowels, and the febrile symptoms have somewhat decreased. Her strainings are as frequent and distressing as ever. ℞. Sec. cornut. ℈j; divid. in dos. iij; e quibus un. exhibitur quâque semi-horâ. In about ten minutes after the exhibition of the last dose of this medicine my patient brought forth, with great difficulty, one dead pup; upon taking which away from her she became so very uneasy that I was induced to return it to her. In about a quarter of an hour after this I paid her another visit; when, lo! the pup was not to be found; but a suspicious and tell-tale appearance in the mother's eye betrayed at once

that she had been banquetting on her own offspring. I immediately administered an emetic; and in a very short time the whole fœtus was returned in five distinct parts, viz. the four quarters and the head. After this the bitch began to amend very fast: she produced no other pup, and, as her supply of milk was small, she was soon convalescent.

No. VII.

PARTURITION.

January 1, 1833.—A beautiful Spanish bitch, belonging to Richard Napier, Esq., was taken in labour about 11 o'clock this morning, and, after very great difficulty, one pup was born. After this the bitch appeared in great pain, but did not succeed in expelling any more fœtus, in consequence of which I was sent for about 3 o'clock P. M. I found my patient very uneasy; breathing laboriously; mouth hot; bowels costive, &c. Upon introducing my finger into the vagina, I could not discover any trace of another pup.

Ordered to be put into a warm bath, and to have a dose of opening medicine.

About five o'clock she got rid of one dead fœtus and two living ones.

2d.—My patient this morning is still very ill: she evinces great pain when pressed upon the abdomen, and it is manifest to me that another pup remains behind. Two of the living ones which were born yesterday are dead, and the third is in a very weak state, being unable to obtain any milk, in consequence of the great restlessness of the bitch. There does not appear any disposition in the uterus to contract; in fact, it seems almost worn out by its previous efforts.

℞. Sec. cornut. ℈j; pulv. zingiberis ℈ij; ol. palmæ q. s. ut ft. pil. tres, quarum una detur singulis horæ quadrantibus.

About half an hour after this another pup was produced, and the bitch appeared much better; in fact, she began gradually to improve, and was very soon dismissed from my visiting list.

Remarks.

I have transcribed the two foregoing brief cases from my case-book in consequence of the remarks upon the efficacy of the ergot of rye in difficult parturition, inserted by Mr. Dick in the last VETERINARIAN; and I think they tend pretty strongly to confirm the idea that this medicine possesses a most remarkable power over the uterus, rousing its dormant or debilitated contractility, and stimulating it to an extra performance of this neces-

sary function after its natural energy has been, in some measure, destroyed by forcible but useless action. The direct utility of the ergot was manifest in both cases, but more especially so in the latter, where the uterus appeared quite exhausted by its repeated efforts; and certainly it is but fair to ascribe its decidedly augmented power to the stimulus of the medicine alone, for no other means were resorted to to procure the desired effect. Its action, too, was prompt; in the first case within ten minutes of the administration of the last dose, and in the last case, where nature was further debilitated, within half an hour. I did not actually see the birth of either pup, consequently I cannot speak as to the difficulty or pain attending it; but at any rate no bad consequences resulted from it in any way.

Coupling these two cases with the one related by Mr. Dick, I think we have fair grounds for placing some degree of confidence in the ergot of rye in cases of difficult parturition in one class of our patients; and in my own practice I shall certainly always resort to it, not only without hesitation, but with an assured expectation as to its efficacy. How far it may be useful in other departments of veterinary obstetrics I have, as yet, no means of knowing; but whenever I have an opportunity, most certainly I will put its efficacy to the test: and I do certainly hope, that if any fellow-labourer has any facts in his possession bearing upon the utility of this medicine, he will communicate them to his brother veterinarians; for it is a most important subject, and one upon which we can be guided only by practice.

ON THE UTILITY OF BOTANICAL KNOWLEDGE,

IN RELATION TO AGRICULTURE AND THE FEEDING OF CATTLE.

[This paper, extracted from an old number of the Gentleman's Magazine, contains so much that is interesting to us as veterinarians, that we gladly present it to our readers.—Edit.]

Amidst that almost infinite variety of vegetables with which the beneficent author of nature has replenished our globe, those which go under the general name of grasses form the principal food of our cattle: next to these, among the natural classes of plants, none are more acceptable to them than the diadelphous or leguminous herbs; of this class is the clover, so much cultivated in England, and the lucerne and some other fodder in France. Besides these, our horses, horned cattle, sheep, &c., will all, in their

turns, eat with equal pleasure, and some with avidity, a variety of other vegetables also. Numberless instances occur where one class of animals will feed with pleasure on those vegetables which others refuse to touch, and will even rather pine than eat. Some plants are highly noxious, and even poisonous, to certain kinds of animals, while, at the same time, they are eaten by others without the least subsequent ill. These are facts which must, in some measure, have been obvious to the most incautious of mankind, even in the earliest ages of the world. The very first race of shepherds must have had daily instances of them before their eyes, and diligent observation must have multiplied, further illustrated, and confirmed them. But they were still only known in the general; no experiments had been made to ascertain precisely the several species of vegetables thus eaten or rejected. The facts are undeniable; and every man's knowledge at this time furnishes him with some instances of the truth of them. We all know that thistles, flag-flower, hemlock, docks, crow-feet, marsh-marigolds, and a variety of other plants, are commonly neglected by our horses and horned cattle, and stand untouched even in pastures not the most fertile and abundant, and where one would think that necessity would drive them to eat any thing. These are but a few out of many instances: there are more than is commonly imagined; and one could wish, in consequence of it, that a course of experiments had been made, to point out the particular instances of this instinct, in that part especially of the brute creation which is so immediately subservient to the uses of mankind. The utility of such experiments must be evident to every one, inasmuch as they necessarily lay the foundation of further improvements in the economy of cattle. The intelligent husbandman would, by these means, have it in his power to rid his pastures of noxious and useless plants, and thereby give more room for the wholesome and salubrious ones.

What might be wished for in this respect has been, in some measure, done. A worthy and truly laudable attempt has been made, by the desire and under the auspices of the celebrated Linnæus, whose great aim in all his botanic researches is to render the science subservient to the public emolument. To this end, it is certainly the province of a botanist to make the plants of his own country the principal objects of his attention: this has eminently been the case with the illustrious author abovenamed, and his country will long reap the fruits of his labours. The results of these experiments may be seen in a paper entitled *Pan Suecus*, printed in the second volume of the *Amœnitates Academicæ*, and the substance of which, so far as

the experiments were made on plants common to our own country, we propose to give here.

Linnæus conceived the first design of this institution from observations made in his Dalekarlian journey, in which he found that his horses left untouched, among other plants, meadow sweet, great wild valerian, lily of the valley, angelica, rose-hay, willow herb, marsh cinquefoil, mountain crow-foot, crain-bill, globe crow-foot, yellow wolfs-bane, and various other shrubs. Soon after his return, himself and many of his pupils set to work. Above 23,000 experiments were made upon the horned cattle, goats, sheep, horses, and hogs, many of which were repeated over ten and sometimes twenty times, with the sole view of determining what kinds of vegetables those several animals would eat or reject. It is easy to be imagined that numberless difficulties must arise in the prosecution of this affair, and that imperfection, in many instances, must at last attend their greatest accuracy. In the meantime care was taken, as far as circumstances would admit, that the experiments were made in a manner as unexceptionable as possible; and the result of the experiments, upon the whole, must be true, as they have a real foundation in those unerring laws of instinct to which the God of nature has subjected the whole of the brute creation. The plants were all fresh gathered, not bruized in the getting, nor offered to the cattle when they were almost famished, nor glutted with variety, nor yet in the spring time, when many of them greedily devour almost any vegetable they can get at, and, in some places, such as are fatal to them, and which at other times they will not touch. The plants were, in many instances, offered to several individuals of the same species. These trials were made only with the indigenous plants of Sweden, from which, it appears, that the horned cattle would eat of the plants which were offered them only 276 species, and that they rejected 218. The goats eat of 449 kinds; and refused but 126. The sheep eat of 387; and refused 141. The horses eat of 262 species; and refused 212; and of those which were offered to swine they eat of 72, and refused 171.

The science of botany certainly holds its most dignified station when subservient to the purposes of medicine; but we have in England too long considered the knowledge of plants as the business only of the physician. Its connexion with other useful arts in life has been too long neglected. They are not the only persons who ought to be acquainted with it. Many others would find not only pleasure, but advantage, resulting from a knowledge of the plants of their own country. In the instance before us, science has opened the way; and I think it is not too much

to say, that it evidently points to greater improvements in one of the most important branches of agriculture, as it relates to the economy of cattle; more than this can scarcely be expected from its assistance. It is to the intelligent grazier or gentleman well versed in the knowledge of our own plants, fraught with careful observation, and practised in the economy of cattle, that the rest must be owing. Nothing but the want of botanic knowledge, in such gentlemen as these, will deprive us of the benefit that might otherwise accrue from reducing this knowledge to practice. In the hands of such persons as are capable of making the most proper and judicious application of it, numerous advantages will spring. The eradicating from pastures poisonous and useless weeds will be one, although indeed no mean one, among many others. Farther, indeed, than this, the husbandman will be enabled to suit his several sorts of cattle to the different pastures in his possession more to their, and, frequently, to his own advantage. Even in marshy pastures, where it would be a difficult if not an impossible task to mend the soil, the growth of many plants might be increased, and the seeds of others sown, which are highly acceptable to different kinds of cattle. By degrees, too, we should undoubtedly be led to the cultivation of other vegetables, besides clover, as fodder to cattle; and the foregoing observation implies, that this might be done in soils and situations where clover would not thrive. Our hay, too, in consequence of these improvements, would be much better; for although our cattle will eat those plants among the hay which they reject while green and growing, yet it does not follow that all are in their dried state equally nutritive and wholesome. The benefits, in fine, which would result from a diligent and general pursuit of these hints would be various and extensive, and many more, in all probability, in the course of years, than can at present be thought of.

ON THE EARLY FORMATION OF CONCRETIONS IN THE RUMEN.

By Mr. Geo. Linton, *V.S., Witton-le-Wear, Bishop's Auckland.*

The subject of this narrative was a calf, three weeks old, which was taken ill, and, being in the same village, I was called to see it. On examination, I found its rumen very much distended. I ordered it to have three pounds of blood taken from it, and gave it sulphate of soda ℥jiii, ginger ℥ss. After this treat-

ment it got better for a few days, and then (as the old Mrs. said) the old complaint returned. I again had recourse to the same treatment, and it again recovered. I was told it was always unwell for the space of an hour. after having its milk given it. Now, at five weeks old the said calf was fat, and sent to the butcher; and, on examining the paunch, I found a ball composed of hair, about the size of both my fists, and of rather a soft consistence. I send you this merely to shew how soon such concretions will take place.

A CASE OF AMPUTATION OF THE FORE LEG OF A HEIFER.

By the same.

I BEG to state another case:—A Mr. Etherington, of Needless Hall, near Bishop Auckland, had a heifer, eighteen months old, that broke one of its fore legs, and which being set by a servant, mortification took place. Being called upon to attend it, I found it necessary to amputate the broken limb about an inch below the knee; and I substituted a wooden leg in its place. The beast did well, and lived two years afterwards; and when slaughtered, weighed upwards of forty stones, of 14 lb. to the stone.

A CASE OF HEPATITIS AND INFLAMMATION OF THE DIAPHRAGM,

FOLLOWED BY BROKEN WIND, AND AFTERWARDS BY INFLAMMATION OF THE NECK OF THE BLADDER, INTESTINES, AND STOMACH; WITH RUPTURE OF THE CÆCUM AND DIAPHRAGM.

By Mr. J. HAYES, *V.S, Rochdale, Lancashire.*

Rem ipsam putemus, ut consule in medium.

IN looking over my journal of cases for last year, I find the following, which may not be uninteresting:—Mr. Heaton, solicitor of this town, had a hackney horse, which he turned out to grass about May 1832, where it remained till the 18th of August following, when he sent for me to see the horse, which was just brought up from grass, as he was not looking so well as he expected, but had fallen much away, as he expressed it. The following were the symptoms developed: pulse 65, and wiry;

mouth dry; respiration about 70; staring of the coat, with loss of appetite; cold extremities; yellowness of the eyes and conjunctival membranes; great fatigue with the least exercise. I immediately abstracted 7 lbs. of blood, and gave him the following: ℞ Aloes ʒiii; tartarized antimony ʒj; calomel ℈ii; fl. of sulph. ʒiv; pulv. glycyrrh ʒiii. Six hours afterwards I repeated this medicine, and in six hours after that it began to operate briskly.

19*th.*—Much better; pulse 50; respiration about 56. Gave calomel, emetic tartar, opium, and digitalis, of each ʒss, glycyrrh pulv. ʒiii, once a-day for four days.

24*th.*—The horse appeared perfectly well, and recovered his usual spirit, so that Mr. H. rode him as before for a week or ten days, when, having to go from home a few weeks, he sent the horse out to grass again. On Mr. H.'s return home, which was on the 8th of September, he sent for the horse to ride him, when he was found broken-winded; but appearing very healthy in every other respect, Mr. H. continued to ride him till the 29th, when he was found in the morning very bad. He sent the groom immediately for me. I found him in extreme pain, with marked anomalous symptoms of pleuritis and enteritis. I abstracted 10 lbs. of blood, and gave the following every four hours in bran-tea, with laxative injections often repeated: ℞ Nitrated potash ʒiii; supertartrate of potash ʒiv; tartarized antimony ʒj; digitalis ʒj.

By the 4th of October he was quite recovered, and Mr. H. rode him as before for about a week or twelve days; when one of those wise descendants of Vulcan (properly termed blacksmiths), with whom, and such like pretenders, this neighbourhood is yet too much infested; one of those persons who, like the rest of his enlightened brethren, knew the "modus operandi" of the whole materia medica to a hair, told Mr. H., as a great secret, if he would give his horse one ounce of saltpetre at night, and the same quantity in the morning, it would certainly cure him of the broken wind; and related to him several instances of horses having been cured of broken wind by him and his medicine (I believe he has cured many a one in the same way, by sending them to their long home, where they have no occasion for either broken or sound wind). Accordingly the nitre was given as he directed, night and morning. The night after I was sent for; Mr. H. told me what had been given; I informed him of the consequences likely to ensue, as the horse was suffering dreadfully under acute inflammation of the neck of the bladder, from the effects of the nitre; accordingly, on the third day he died, notwithstanding every possible means were used to save him. He died in extreme suffering.

Post-mortem Examination.—On opening the thorax, the lungs appeared sound; a portion of the cæcum protruded through a rupture of the diaphragm, and which part of the cæcum was likewise ruptured at its pocket-like part or extremity, which lay through the diaphragm in the thorax, and some of its contents had escaped through the aperture or rupture of the cæcum into the thorax. The rupture in the diaphragm was near its inferior part, about five inches from its attachment to the centre of the sternum; the orifice was two and a half inches in diameter, with its edges sloughed off quite smooth and circular: the liver was in a state of gangrene; both the large and small intestines were in a very high state of inflammation; the stomach also, particularly its cuticular portion, being in colour nearly black; the neck of the bladder, and the whole length of the urethra, bladder and all, was in a state of gangrene; several small calculi were found at the neck of the bladder, which did not contain more than half a pint of urine. Notwithstanding all these appearances of diseased viscera, the horse continued to eat during the intervals of cessation from pain, which lasted about ten minutes at each time, followed by extreme agony, which lasted half an hour, or more sometimes.

Perhaps you, Messrs. Editors, or some of your experienced readers, will favour me with some remarks on the nosological, pathological, and physiological considerations, through the medium of that amplificator of our profession, THE VETERINARIAN. Though this, or my other communications, may not be either new or extraordinary with you or other practitioners, yet I hope you will consider them as an earnest of good will, wishes, and intentions for you and THE VETERINARIAN.

P. S.—In my communication on the Epidemic Catarrhal Fever of last winter, inserted in the Number for April, at p. 193, for "eight oz. of blood," *read* "eight lbs. of blood."

MISCELLANEOUS CASES.

OPEN URACHUS—INFLAMMATION OF THE UTERUS—RED WATER.

By Mr. E. BARKER, *V.S., Stokesly, Yorkshire.*

ON *June the* 20*th*, 1831, I was called to see a foal that had passed its urine the right way during the first eight or ten days after being dropped: the water then began to escape from the

navel. The foal appeared to be very ill, probably from that cause. I had him cast, tied a ligature tightly round the part, and left a cooling lotion.

On the 23*d* I saw him again. He was lying down in the field; he got up, staled the right way, and is now a fine colt.

On *September* 3, 1833, I was sent for to a mare that had been ill all day. The principal symptoms were, lying down and getting up; lifting one hind leg, and then the other; with a discharge of bloody fluid from the vagina. The pulse was 80.

She had been bled; but I took away 8 quarts more. I gave her an opiate enema, containing 4 oz. of tincture of opium, and 2 oz. of spirit of nitrous ether, in gruel; and an hour afterwards she had a ball, containing 3 drachms of Barbadoes aloes, with 10 grains of calomel.

4*th*.—Pulse 75. I again bled her, and gave her a laxative ball, containing 2 drachms of aloes: a laxative enema was also administered.

5*th*.—Pulse 48. Give 2 drachms of aloes.

6*th*.—She is well, and gone to grass.

August 13, 1833.—A cow had been ill with red water five days. She ate nothing; rumination ceased; and she could not walk more than twenty yards at a time. I gave her Cape aloes 2 oz.; sulphur 2 oz.; sulphate of soda 8 oz.; nitre 2 oz.; ginger 1 oz. in nettle-tea, rather rotten.

17*th*.—She was considerably better; but as she continued to be weak, I gave her a cordial drink. She did well.

I have cured many cases of red water in the same way.

ON THE STOMACHS OF RUMINANTS.

By a Veterinary Surgeon.

Feeling dissatisfied with the bare statement of cases, which I did not venture to enlarge upon myself, or find others so ready to do as I wished, I have discontinued sending them; nevertheless I have been mindful of your work, and thinking how otherwise I could assist you; nay, I have time after time taken my pen to write an essay, or start some question likely to produce a profitable discussion; but however much I have thought and written, nothing satisfactory has been produced.

Your Number for this month found me in a state of mental lassitude, with scarcely a thought of ever making another

ttempt; and in such a state it probably would have left me, but for the notice Mr. Friend has taken of two of my cases, for which I heartily thank him, though he has all but said I am a stupid fellow; which imputation (with your favour) I can very well bear, if it should not be in my power to shake it off. I hardly know how to begin about this, as I would not willingly tread one step upon the ground of dispute between Messrs. Friend and Harrison, whose controversy does them credit; therefore, without pretending to a perfect knowledge, either as regards the anatomy, physiology, or pathology of the organs principally in question, I will state my ideas, from which, *if correct*, a deduction may be drawn, applicable to the cases noticed by Mr. F.

The first three (so called) stomachs, consisting principally of muscular fibres, placed and acting in different directions, are lined with a cuticular membrane, with singularly different appearances in different parts; from the surface of which it is not proved (to my knowledge) that absorption takes place, or secretion, farther than something of the nature of mucus, intended for its own protection (which in some cases forms a coat upon their contents, and which, if I mistake not, has been taken for a membrane, as mentioned by Mr. F.), or to my satisfaction that they are susceptible of *immediate* impression from purgative or other medicines: nay, more, I very much question if we have any immediate means of emptying them, except the mechanical one of washing them out, by the introduction of fluids in large quantities. Of the functions of the three, I shall only say, that the first is the receptacle of the solids taken in, possessing the power of returning quid after quid for rumination, and which action appears, in some measure, under the influence of the will: that the second is apparently intended for the retention of water, which it parts with as occasion or the nature of the food requires (not, perhaps, by any effort, but by being absorbed by the solid aliment): that the third receives the ruminated mass, and subjects it to something of the nature of tituration within its manyfolds, and passes it into the fourth or true stomach, with which I have, at this time, nothing to do. The principal causes or affections interfering with the above functions are as follow:—Over-distention, by which the power of supplying the quid for rumination is destroyed, fermentation takes place, carbonic acid gas is formed, its discharge is prevented, and the disease called hoove is produced, want of muscular energy from deficiency of nourishment and other debilitating causes, with which may be mentioned a deficiency of water at some seasons, constituting chronic indigestion; all acute diseases of a febrile

and inflammatory nature, whereby the vital energy is impaired or diverted to other parts. When rumination is suspended fermentation may take place, and now and then cause our patient to swell; but, in other respects, the contents of the stomachs remain, under ordinary treatment (as the learned have it), "in statu quo," till death or a reaction takes place (a return of the quid or cud, as it is called, is so much to be desired as a proof of approaching recovery, that old women talk of taking a quid out of another's mouth, to supply the place of what they say is lost). To the above I am inclined to add another cause, but I do it "with fear and trembling," viz. the shutting up in a strange place or without company; or is it that the paunch cannot get rid of its whole contents? for I am told, and which I believe, that if a beast is fasted two days before slaughtering, the rumen will still contain some quantity; and as to those cases where disease has been the cause of death, I never met with one in which it did not contain a considerable quantity; and I find cattle, especially at pasture, will eat after they have ceased to ruminate.

I now proceed to make a few observations on my cases, published in your May number; and, to begin, must say, that I was surprised to see that you named them, "cases of inflammation of the mucous membrane;" and I am still more so, that Mr. F. should think them cases of indigestion, overlooking, as you and Mr. F. must, appearances of much more serious disease; for, as regards the bowel affection, there was no sign of pain while living, or appearance of active inflammation when dead; and as to the state of the stomachs, there was no appearance of hoove while living, or of over-distention when dead; consequently, that could not irritate and produce disease of the heart, lungs, liver, kidneys, and bowels.

I find I shall not have space for many remarks on the cases in question; but I thought them extraordinary, and that there were some appearances not referrible to ordinary inflammatory action; for instance, there was no expression of pain or difficulty in breathing; there was general warmth, and secretion of saliva; the state of the liver, without any blood in it, of a soft spongy texture, and bright yellow colour; the gall bladder full of thick bile, as though the secretion had continued after its discharge into the bowels had ceased, and after the action of the absorbents had ceased, as there was no discolouration of the fat and other white parts of the body; the state of the kidneys, and part of the bowels, that of disorganization; the quantity and appearance of the mucus different from what is seen in ordinary disease.

As to treatment, I believe both cases were past recovery before

I saw them; and, to tell you the truth, I did not know how to treat them better than I did.

Messrs. Editors, do me the favour to read my paper again; and say, was there nothing more worth notice than the bowel affection? Mr. Friend, do the same; and say, was the state of the stomachs, cause or effect?

ON SPLINTS.

By Mr. J. P. Cheetham, *V.S., Edinburgh.*

The following remarks are intended to explain the nature of that disease denominated a splint.

It may seem to many superfluous, as the disease is generally supposed to be well understood by all in the profession, and even by numbers not connected with the art.

In my commencement, it will be requisite for me, in some measure, to describe the physiology of the carpus and metacarpus.

The carpus is composed of seven or eight bones, arranged in two rows; and the metacarpus of three bones.

The carpus has three horizontal articulations; the first is formed by the inferior extremity of the radius, with the superior row of bones, and in it is allowed the greatest degree of flexion; and, as a consequence, there are surfaces adequate to complete that motion: but this action diminishes in the articulation formed between the two rows of bones; and in the inferior part of the joint we may say it is imperceptible.

The different parts of the articulations which I have wished above to draw attention to, are those presenting the hinge form, and of which the superior articulation, posteriorly, is principally composed; the middle has a less hinge surface, and the inferior has none.

On viewing these parts of the articulation that flex the knee when the leg is in the extended position, there can be discerned in the superior a space between the articular cartilages, and which is less seen in the middle one, but which is sufficient to demonstrate that these portions of the articulations in this action convey none of the weight down to the rest of the limb.

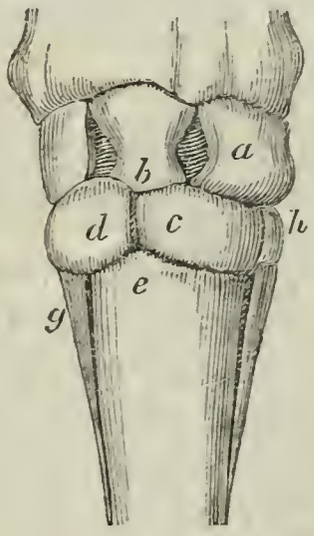
The remainder of the anterior part of the articulations not occupied by the foregoing, are oblique surfaces, acting similar to wedges, so as to separate each other: this curious structure is undoubtedly made to diffuse concussion.

The upper row of bones, I believe, are moved only in a trifling degree, from their being bound together by the shape of the

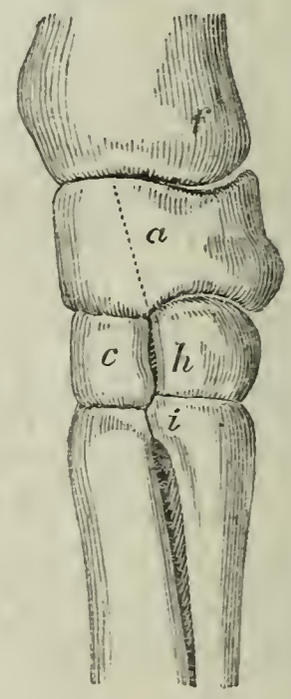
articulating surface of the inferior extremity of the radius: if any of them are displaced, it is that of the os scaphoides (*a*) inwards.

The weight having passed on to the inferior row of bones by the oblique surfaces of the posterior row, that of the wedge-like shape of the os lumare (*b*) pressing between the os magnum (*c*) and os unciforme (*d*), from this bone forming the centre, or nearly so, of the joint, I conjecture that it must receive a great share of the weight, from which these two bones underneath will, by the opposition of another wedge, formed by the superior head of the large metacarpus (*e*), be forcibly compressed, and therefore recede in both directions.

A front view of the right knee.



An inside view of the right knee.



Having examined the various surfaces, it will be perceived that the weight is transmitted most anteriorly, arising principally from the narrowness of the oblique surfaces of the superior articulations.

To prevent the possibility of the knee being thrown back, there is a strong complex ligament, arising from the radius (*f*) at its inferior and posterior extremity, which also inserts itself into all the bones of the carpus posteriorly, and, lastly, into the head of the large metacarpus.

This ligament clearly shews, when in action, what I have asserted—that the posterior parts of the articulations of the carpus tend to separate, instead of approximate, as on a first view we might suppose.

Now, having shewn, in some degree, why I should have come to this conclusion, of the weight being sent down the anterior part of the carpus, I shall follow the remainder of its effects upon the other bones.

The pressure having caused the os unciforme and os magnum, which are bound together on their anterior part by a horizontal ligament about an inch in length, to divide, and that most anteriorly, it will follow that these bones will describe a portion of a circle.

This being the result, the larger circumference moving most, that of the os unciforme acts on the outer small metacarpal bone (*g*), on an inclined plane upwards; while that of the os magnum acts with the os trapezoides (*h*), and the head of the inner metacarpal bone (*i*), which articulates with them in a perpendicular position.

When either of these two bones are moved beyond their proper limits, they will press distinctly on the anterior part of the small metacarpal bones. The small metacarpal bones are united to the large ones by ligamentous fibres crossing each other like an X, the outer metacarpal bones having in front, at the superior part, about one-eighth of an inch of the ligament interposed, but not so much posteriorly. Two inches and a half below the head, the two bones come nearly in contact, and continue in that close connexion from two to three inches downwards, and then they are set at liberty for another purpose,—that of giving attachment, by their rounded extremities, to ligaments which support the small portion of horn at the back part of the fetlock. The inner metacarpal bones vary as to their distance from the larger, the space at the superior part of the ligamentous substance being three-eighths of an inch; and they also approach each other three inches lower down. I may here observe, that their ligamentous union posteriorly is more uniform.

At some length I have treated of the physiology of the parts which, I imagine, have the greatest share in producing splints. The causes of splint are various, but they may frequently be traced to abuse of the horse, or to ignorance. When an outside heel is turned on a shoe, and none on the inside, a splint will usually be the result.

It is likewise an acknowledged fact, that horses that turn their toes inward are also liable to splints on the outside of the limb: when the toes are reversed, they are formed on the inside of the leg. It may also be stated, that when the toes are turned inwards the knees are thrown outwards; while, when the contrary is the case, the knees approximate. In this instance the outside of the shoe wears most; and, as a consequence, the chief

weight is directed to that part of the shoe. The degree of the evil will be in proportion to the deviation from the proper position of the limb.

I need not enforce this fact, owing to every one acquainted with shoeing of horses knowing that the outside heel and quarter require to be kept stronger than the inner; and, after all, when the shoe is taken off, the outside is found nearly worn through, while the inner has but little suffered.

Now if the toes are turned inwards, the effect will be just the contrary, as far as the parts will allow: the inner quarter and heel being weaker than the outer, they cannot be used with the same freedom as the outer; and what is more favourable to the legs of these animals is, that they are generally not possessed of much action. The causes of splint operate principally by acting on the carpus, throwing it outwards or inwards. As the latter is the most frequent, I shall first describe it. It may be conceived that, when this effect is produced, the oblique surface of the os unciforme, resting upon the small metacarpal, will be increased, while that on the large will be diminished; and that articular surface upon which the os magnum moves is likewise presenting a greater angle; and these circumstances will cause a greater part of the diffused force or weight to be concentrated on the inner small metacarpal bone.

When this irregular action takes place, the question merely is, whether the ligamentous connexion between the metacarpal bones is elastic enough, through its whole extent, to contend with that undue pressure? In many instances, I say, the ligamentous substance must be injured; and the usual seat of injury is three inches below the knee. It is obvious that the inner metacarpal bone is united to the large throughout a space of six inches; for the three lower inches the bones are closely in contact, while throughout the superior three the ligamentous substance gradually increases in width, till it arrives at a point where it averages two-eighths of an inch.

From the undue lateral pressure which may displace the upper part of the inner small metacarpal bone, I shall compute it to be one-eighth of an inch: the termination being at six inches in the centre, the common seat of splint, it will act with immense force, at a part not containing one-tenth of the connecting ligament.

This being the case, injury of the ligament at this part is inevitable. It may be argued, that at the superior part it cannot yield to the extent that I have stated: I would only remind such objectors, that the ligamentous fibres cross each other like an X, so that, instead of being two-eighths of an inch, they are, in

fact, four-eighths or more in length. I do not, however, mean to deny that the force is not diffused over both classes of fibres.

Many, again, may say, that the small metacarpal bones will compensate with their elasticity. To satisfy such on this point, I only request them to take the metacarpal bones, where they are anchylosed by a splint, and in the common situations, and use all their strength to separate them; all they can do will be nearly imperceptible without fracture.

I imagine there are but few who will not grant me what I have so strenuously advocated, that an undue quantity of the diffused concussion may be thrown upon either of the small metacarpal bones, and also the effects of this concussion.

Why splint should invariably appear on the anterior part of the ligament in disease, arises from the heads of the small metacarpal bones being acted upon anteriorly.

From what I have advanced, it will be seen that my decision is similar to many others, that the disease called splint originates in an injury done to the ligament.

On the first appearance of splint there is generally but slight lameness, which is the cause of the animal being continued at his regular occupation, and the injured ligament having to perform its accustomed duties. To guard against the repeated attacks made upon this inflamed part, ossification of the ligament is the result, and is frequently attended with exostosis. When the greater part of the ligament has become ossified, the ossification will disappear where the splint first commenced, and will extend upwards. In many instances, before the entire ligament is involved, it may be observed, that there is an outside splint forming from the inner metacarpal bone, presenting such resistance to the os magnum, that its only resource is to diffuse the concussion through the os unciforme by the outer metacarpal bone; and it having also to accomplish its own action, we may expect a painful splint.

When a portion of the outer ligament is ossified sufficiently to contend with the inner metacarpal bone, we find that more of the ligament takes on diseased action; and, in some cases, they will go on contending with one another until both ligaments are completely ossified.

Now that two grand modes of diffusing concussion are cut off, or nearly so, the only resource is that of the os unciforme moving up an inclined plane, but which may be said to act in the contrary direction. If the cause that first produced splint still exists on the inside of the leg, and the limb is put into regular action, each part required to perform its own action, and no

accommodation being granted, the os unciforme has to move up its inclined plane, while the os magnum is propelled against the perpendicular head of the inner metacarpal bone, and which cannot move in the slightest degree; the consequence is, inflammation of this part of the bone, or the last vestige of the ligament, accompanied with exostosis: and this is what is called a splint close upon the knee, and which every veterinarian knows to be troublesome. The common treatment consists in the application of counter-irritants, the result of which is, that the inflammation is removed, but not the cause or effect of it; and this is the reason why so many horses that have been treated for splint go sound on being first put to work, but which soundness does not always continue. They may be free from lameness on leaving the stable, and return dead lame from the cause continuing to operate.

I shall now endeavour to explain how a horse with splint becomes sound, or apparently so, and is rendered useful. From the numerous inspections I have made, I am brought to the conclusion, that the head of the inner metacarpal bone is absorbed sufficiently to bring it on a level with the surface of the large metacarpal, while that where the os unciforme rubbed becomes also flat. The changes may go on imperceptibly, as when the ligament has been a long time in becoming ossified. It is beautiful to see, in some specimens of what might be called *chronic* disease of this kind, the grades of absorption of the heads of these bones, each of them changing their angle as required.

If the whole ligament become ossified or diseased at once, it will be found that severe lameness is the consequence; and, of course, a longer time will be required to elapse before a cure can be expected.

Splints seldom occur on the outside of the limb, independent of one or more on the inside; and when such do arise, I should imagine, from the arrangement of the bones, that the lameness would be of a trifling character.

It has been noticed by some, that splints are a concomitant of navicular disease; but this seems to depend upon that *bursa* being thrown partially out of action, from which more concussion will be thrown on the carpals and metacarpus, and splints will be produced.

In the treatment of this disease I cannot boast of any notable specific. To remove the cause, it has been often said, is half to effect a cure. To do this in all cases is impossible; but in this disease many of the causes may be mitigated,—as, in horses that turn their toes outwards, they can have the outer quarter kept lower

than the inner, which will assist in bringing the limb into that direction in which the animal evidently strives to place it, as is sufficiently shewn by the peculiar wearing of the shoe.

An outside splint, when independent of an inner one, may be treated in the reverse manner; and even if there is one on the inside, the outer one may be relieved by counter-irritants and rest; but if exercise is allowed, all chance is gone, and inflammation will be excited in the inner ligament, by throwing all the weight on the corresponding bone. In the cure of this disease, suspension from work is of essential importance.

I have said that counter-irritants of all kinds are of service; but there is none that will surpass the actual cautery. The common blister is an excellent application; and, if the horse is not sound, the blister may be repeated with beneficial effects.

As a precaution, before putting a horse to work that has become sound, or apparently so, from a splint, I would recommend walking exercise for a space of time to be judged of by the circumstances of the case.

Having said so much, and not adverted to the notions of former authors, I think it my duty to explain why I have not entertained their theories,—that splints arise exclusively from the pressure of the os trapezoides upon the inner metacarpal bone, and that it is near the centre of the body from which it must receive more weight than its due.

The causes of splints are the same that I have been naming, and on which I found my argument.

The os trapezoides articulates with the inner metacarpal bone by a flat surface, or nearly so; from this we gain nothing: its superior surface is rounded, and has a corresponding concavity in the inferior and posterior articulating surface of the os scaphoides. This form of articulation is to admit of flexion and extension; and from what I have proved, or think I have done, that the hinge form of articulation in the carpus conveys none of the weight down the limb in the extended position.

There is another fact not to be passed unnoticed, viz. the attachment of this bone with the os magnum, which is such as to permit very little motion, and especially downwards. This being the case, how can this ligament escape while one of not less dimensions is injured?

I wonder in what way some persons can possibly account for the anatomy of the uniting ligament being like an X. For this purpose, one direction of fibres would have been all that was required.

The next part I am to scrutinize is the weight coming down the inside of the leg. I shall, for illustration, select a horse that

turns his toes outwards, and having his knees approximating to each other. No one can doubt that he must be very liable to splints on the inside of the leg.

It will be remarked by a careful observer, looking at an animal thus formed, and comparing the head of the radius with that of the foot, that the line formed is that of a curve, the convex side being on the inside of the leg, while the concave is on the outside. This simple definition will, I am sure, convince the reader, that the inner part of the *carpus* is relieved from a weight which is increased on the outer part.

An affection intimately connected with the carpus is that vulgarly called "weak or bent on his fore legs," which is, that the animal tries always to keep the knees in a partially flexed position. The cause of this, as far as I am aware, has never been satisfactorily explained; and I am myself in doubt, but shall merely state what I have seen. The parts I have found diseased are the oblique surfaces which have been ulcerated, attended with exostosis, and that most particularly in the superior articulation. It is no wonder that an animal, under these circumstances, should keep the knees in a flexed position; and it may be also perceived, that it will be no easy task to cure such a malady.

CASES.

TETANUS, AND INFLUENZA CONNECTED WITH PLEURITIC AFFECTION.

By Mr. W. Youatt.

Tetanus.

June 8th, 1833.—A bay horse, eight years old, that had been shod at my forge three days before, was brought, being lame in the near fore foot. On examining the foot, an old stub was found, which the smith had carelessly overlooked, and close upon which he had driven a new nail. There was no wound; but there was the pressure of the two nails on the sensible laminæ. The stub was extracted; the shoe put on again; the bearing taken from the part; no nail driven there; and the lameness disappeared.

15th.—I was requested to see this horse, which was said to stand very straddling, to be very tender about the loins, and to have great difficulty in staling. I found this all true, but it was only a part, and a little part, of the truth: the protrusion of the head, and a general stiffness, so great, that the horse could

scarcely make a walk of it, pretty plainly indicated, what the finger put into the mouth confirmed beyond all doubt, that the horse was tetanic. The pulse was 70; full and hard.

I ordered the jugular to be immediately opened, the orifice to be large, and blood to be abstracted, until the pulse evidently faltered. Sixteen pounds were taken away before this effect was produced: the jaw was now considerably relaxed, and 12 drachms of aloes, divided into three balls, were given by means of a cane.

In the evening the symptoms were more confirmed; the expanded nostrils, the erect ears, the quivering tail, the fixed position, could not be mistaken. A pail of thin gruel was ordered to be slung within his reach, and a wet mash put into his manger. He was already in a loose box, and double clothing was directed to be put upon him.

16*th*, 8 A.M.—He has drunk about two quarts of the gruel. The physic works briskly. No alteration in the symptoms.

5 P.M.—Still purging. Give pulv. opii ʒi in a small ball.

17*th*.—The jaw is evidently a little relaxed. The horse has pulled a little hay from his rack, and imperfectly masticated it, but he could not swallow it. Give pulv. opii ʒi; pulv. antimonialis ʒii, morning, noon, and night.

18*th*.—The purging has ceased; the jaw is as rigid as ever; and the general symptoms are aggravated. ℞ Pulv. opii ʒi; pulv. aloe Barbadens. ʒi; pulv. antimonialis ʒii; morning, noon, and night. Throw up three or four times every day, and in large quantities, injections of thin gruel, in each of which half a pound of Epsom salts have been dissolved.

19*th*.—The tetanic symptoms still violent. The bowels had not been acted upon. Give morning, noon, and night, the following ball:—pulv. opii ʒi; pulv. aloe Barbadens. ʒii; and continue the injections.

20*th*.—Every symptom yet more aggravated, and the bowels not opened. Balls and injections as before.

21*st*.—Still worse; bowels not opened. Medicine as before.

22*d*.—In the same state, and still constipated. Bleed until the pulse is affected; and give one pound of linseed oil made into an emulsion with the yolk of an egg. This was tolerably easily effected, by means of a pint bottle with an unusually long and small neck.

Evening.—In the same state; the bowels not open. Repeat the oil, and continue the injections.

23*d*.—The bowels are at length slightly opened. Repeat the oil, and give in it a drachm of powdered digitalis.

24*th*.—The bowels are freely opened, and the symptoms are

all somewhat mitigated. Continue the digitalis morning, noon, and night.

25*th*.—The patient is evidently better. Continue the medicine.

26*th*.—Still improving; but the bowels being rather confined, give two drachms of aloes with the first and last doses of medicine. The horse is now able to eat tolerably well, and drinks freely.

28*th*.—The patient has made rapid improvement; and the owner being anxious that he should go to the salt marsh, I consented that he should go in a week's time. The horse is sadly reduced. He was taken up again in the beginning of September, perfectly well, and having regained his former condition.

Influenza connected with Pleuritic Affection.

Mr. N——, a very old friend of mine, taking a trip across the Channel, permitted a young friend to use his black horse during his absence. The horse was ridden in the Park on August the 13th, 1833, at a rather fast pace, and afterwards left in the cold. On his return to the stable, the ostler remarked that he did not look quite well; and he did not feed quite so well during the night.

On the following day, the 14th, he did not appear sufficiently ill to justify the ostler in refusing to let the gentleman have him, and he was taken again to the Park; but the gentleman finding that he did not go pleasantly, soon brought him home.

I saw him early in the afternoon: the pulse was 64; irregular; the mouth hot; the membrane of the nose of a brown red colour; the extremities warm; the eyes dull. On being walked in the yard, there was an evident staggering in his gait. There was cough, but neither frequent nor sore.

Treatment.—Abstract blood in a full stream until the pulse flutters; about 12 lbs. were taken away. The horse then broke into a profuse perspiration, and shivered all over. He was ordered to be warmly clothed; to be put into a loose box; and a mash only to be given him. A fever ball (digitalis, emetic tartar, and nitre) was administered.

7 P.M.—It seemed as if the disease was knocked down at once: the pulse was 50, and soft; the brown tinge was gone from the nostril, but there was a little too much red injection; the extremities were of their natural temperature; and the animal fed a little. Repeat fever ball with aloes ʒii. Give another mash and a very little hay.

15*th*, 8 A.M.—Lay down in the night, and evidently improv-

ing: pulse 44. Repeat the fever ball without the aloes; continue the mash, and give a few tares.

7 P.M.—The case is materially altered: the pulse is 56, and has a wiry feeling; the horse is very uneasy, and continually shifting his posture; the mouth is not hot; the membrane of the nose is pallid, with a tinge of lividness; and the extremities are getting cold. The sides are becoming exceedingly tender; the horse shrinks almost to falling when they are touched. The spasms of the sub-cutaneous muscle appear like little wavy lines creeping over the sides: it amounts to shivering in the pectoral muscles.

Bleed again until the pulse is affected: when about 6 lbs. were taken away he began to stagger. Give fever ball.

16*th*, 8 A.M.—Much in the same state, except that the extremities are deathy cold. I proposed to blister the sides, but it was decidedly objected to by the stable-keeper, on account of the blemish it would make. A large rowel was therefore inserted between the fore legs. Sling a pail of very thin gruel in the box, the horse refusing altogether to eat. Give fever ball with aloes ʒii.

3 P.M.—Apparently better: pulse 46, and softer; the extremities regaining their natural warmth; has eaten a little mash and a few tares, and drunk the whole of his gruel; the aloes have operated slightly. Give fever ball.

7 P.M.—Not so well: pulse got up to 64, small and wiry; again uneasy, and frequently pawing; and the extremities are once more getting cold. Give fever ball with aloes ʒii.

17*th*, 7 A.M.—Materially worse. The animal has a peculiar glaring anxious look; the pulse is got up to 84, small and wiry; the extremities are icy cold, and the coldness reaches considerably above the hocks. The horse is unwilling to move a limb, and stands straddling widely. The wavy lines again appear upon the sides; the breathing is quickened and interrupted.

Take away more blood: about six pounds being abstracted the pulse began to falter, and then suddenly rose to 100, with much irregularity. Give fever ball. Use plenty of hand-rubbing about the legs, and bandage them warmly and high.

The stable-keeper, mistaking the unwillingness of the horse to move for mere debility, and attributing the coldness and the shivering to the same cause, warmly remonstrated against this third bleeding; and said, in no measured terms, to my assistant, that I did not understand the case, and that he should have farther advice. He did condescend to ask my assistant whether I was in the habit of meeting Mr. Field, and immediately sent off for him. On being informed of this I wrote without delay to the

stable-keeper, stating, that I was not accustomed to interference of this nature, and that I gave up the case.

Mr. Field soon after arrived at the stables, and being informed of some of the circumstances, very honourably refused to see the horse, except in conjunction with me. This brought the stable-keeper to his senses; he came and apologized for what he had said and done, and begged that I would resume my attendance: I did so, and immediately of my own accord sent for Mr. Field.

Before he arrived the benefit of the third bleeding began to be apparent; the extremities lost somewhat of their peculiar coldness; and the nose a good deal of its pallid lividness. The horse was more lively, and moved with more ease and seeming strength.

6 P.M.—Mr. Field considered it to be a case of what he called pneumo-pleuritis, or inflammation of the substance of the lungs, as well as of its investing membrane. He approved of the bleeding, but thought that the full quantity of blood which could be abstracted with safety had been taken. He recommended that two additional rowels should be inserted in the brisket, and that the sides should be blistered. He objected to the continued use of sedatives, and relied more on diaphoretics and diuretics in these obscure cases of chest affection.

Two additional rowels were accordingly inserted. The blistering was compromised by rubbing some turpentine liniment well into the sides, and an alterative ball, composed of nitre, sulphur, and levigated antimony was administered. The horse has not eaten any thing during the last two days.

18*th*, 7 A.M.—The pulse still 100, but soft and regular. The extremities beginning to gain a little warmth; but the animal yet refuses to eat.

Drench him with a little gruel. Dissolve one drachm of emetic tartar in two ounces of spirit of turpentine, and stimulate the sides afresh. The rowels act well. Give a fever ball.

7 P.M.—The emetic tartar liniment has done its duty, there is both vesication and considerable swelling; the extremities are warm; the Schneiderian membrane of a more healthy colour; the pulse 92, soft, but somewhat irregular.

Give as a drink digitalis and emetic tartar, of each one drachm, nitre ʒiii; sp. nit. eth. ʒii; tinc. opii ♈i. The horse still will not eat; drench him with gruel.

19*th*, A.M.—Pulse 89, and irregular; the fore extremities warm; the hinder ones rather cold. He seems to have picked a little hay in the night, but refuses every thing we offer him. On being taken out he staggers sadly as he walks; the Schneiderian membrane possesses a healthy character, except a patch of

injection in the angle within the nasal orifice. Continue the gruel. Give a fever ball with antimonial powder instead of emetic tartar.

6 P.M.—Pulse 80; extremities rather cold.

On being offered a little grass that had been cut from one of the borders of the garden, he ate it greedily. More was ordered to be procured. Give ball as before.

20*th*, 8 A.M.—Pulse 80, soft and more regular; extremities still rather cold: ate a little more grass; ordered him to be supplied with it, and the gruel to be discontinued. Give alterative ball.

5 P.M.—Improving, pulse 74; a slight discharge, of a mucopurulent character, from the left nostril; has eaten a little hay; extremities warm: give ball as before.

21*st*, 8 A.M.—Improving; pulse 70; extremities comfortable; continues to feed a little; ball as before.

22*d*.—The discharge from the nostril had increased until this morning, and is now succeeded by swelling of the eyelids, redness of the conjunctival membrane, and a considerable flow of tears; but the horse eats with greater appetite, and the pulse has fallen to 60, with an intermittence of one pulsation every thirtieth beat. Bathe the eyes with warm water, and give ball as before.

23*d*, A.M.—The swelling of the eyelids has subsided, and the eyes have cleared up. The intermittence is now at every tenth pulsation, but the horse improves, feeds fairly, and lies down and rolls as he was accustomed to do when in health. Give cordial diuretic ball.

24*th*.—The intermittent pulse has ceased, and the horse appears to be doing well. He was occasionally visited afterwards, and then struck off the sick list.

THE VETERINARIAN, OCTOBER 1, 1833.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

ON THE EXTERNAL CAUSES OF DISEASE.

[AERIAL POISONS, &c. &c. continued from page 370.]

By Mr. W. F. KARKEEK, *V.S., Truro.*

Silvis ubi passim
Pallantes error certo de tramite pellit
Ille sinistrorsum, hic dextrorsum abit, unus utrique
Error, sed variis illudit partibus. HOR.

IF a period should ever arrive when the human mind will be enabled to deduce an entire series of conclusions from the facts

and general experience with which it can be furnished, so as to build up a more harmonious and consistent philosophy than we at present enjoy, the facts themselves, and our general experience, must be of that definite and indisputable kind that will impress on our minds a conviction of their immutability.

The differences of opinion that have existed and still exist in the forms and modes of practice among medical practitioners is astonishing: they are constantly changing; for what man is pleased to term the perfection of the science to-day, is by another, to-morrow, deemed comparative ignorance. Discrepancy of opinion in matters of faith may be easily allowed, because there is no common measure of the subject of disputation by which these disputes may be adjusted—"one man's faith can swallow a camel, whilst another's is scarce equal to the digestion of a sparrow." But in the sciences, where we have observation and experience as guides, it is, we repeat, astonishing that such differences should exist.

In these disputes too, that trite and excellent adage—"*In medio tutissimus ibis,*" is altogether forgotten:

> "One to the right, one to the left recedes,
> Alike deluded, as each fancy leads."

These remarks are occasioned in consequence of observing the great differences of opinion that exist respecting the nature and properties of the blood: one party endeavouring to find in the changes undergone by the blood and the other fluids the cause of all diseases, whilst another, determined "solidists," maintain that all diseases arise from a deranged condition of the solids, and that every change in the condition of the fluids is a consequence of that derangement.

> "Felix qui potuit rerum cognoscere causas."

The believers in the humoral pathology were in error in attributing all diseases to a defect of the humours; and the "solidists" have been equally in the wrong, in saying that a primitive change in the condition of the fluids is imaginary, and that the doctrine of humoral pathology is without foundation. Professor Coleman was the first who placed this matter of dispute in the clearest point of view, when by his simple, yet celebrated

experiment of transfusing the blood of a glandered horse into the veins of a healthy one, previously prepared by copious blood-letting,—he produced the disease in all its virulent characters. Therefore the question now is, do the morbid changes which are observable in the fluids merit the name of disease? Or, in other words, can they be the seat of primitive alterations or not? We are of opinion that they are.

We have already shewn the mode and channel by which the blood may become empoisoned; and we have likewise stated, that in all diseases arising from aerial poison, it was contaminated: the latter part of this sentence, we believe, no one will attempt to dispute. The following experiments confirm what has been before stated, for they prove, beyond a doubt, that the different agents which produce specific diseases are first carried into the circulation before they produce specific effects upon particular parts. Mr. Hunter found that infusions of opium, ipecacuanha, rhubarb, jalap, &c., when received into the circulation by the jugular vein, produced the same effects as when taken by the mouth.

Sir E. Home proved the same with colchicum. In instances of animals being killed by arsenic taken internally, the stomach is found bearing marks of inflammation; the generally received opinion is, that it is caused by the actual contact of the arsenic on the internal coat of the stomach. But many circumstances tend to shew, that it is not altogether correct, since in whatever way the poison is administered, the inflammation is confined to the stomach and bowels. "Mr. Hunter applied arsenic to a wound in a dog: the animal died in 24 hours, and *the stomach was inflamed.* Mr. Brodie repeated the experiment several times, taking the precaution to apply a bandage to prevent the animal from licking the wound, and the result was, that the inflammation of the stomach was commonly more violent and more immediate than when the poison was administered internally*." From this we may safely conclude, that arsenic, in whatever way it is administered, does not produce its effects on the stomach until it is first absorbed and carried into the circulation.

* Philosophical Transactions, 1812.

By several experiments with the muriate of barytes and emetic tartar, Mr. Brodie came to the same conclusions*. From these examples, then, it is probable, that these, as well as many other agents, are inert until they first mix with and give new properties to the blood. They are then thrown out of the circulation into the various cavities,—the emetics into the stomach, the purgatives into the intestines, the diuretics by the kidneys; and the increased action and inflammation which some of them produce in the stomach and bowels, is merely the effect of the diseased secretion, produced by the deranged state of the circulating current.

A convincing proof that these agents enter almost immediately into the blood is seen by the rapid manner with which some of them pass through the circulation into the different secretions.

Stehberger found that madder, indigo, and rhubarb could be detected in the secretions of the kidney in fifteen minutes from the time that they were swallowed. Turpentine, when rubbed into the skin, appeared in the urine in twenty-five minutes; but when inspired at the same time, it was found in the secretion of the kidneys in fifteen. It is likewise a fact, that prussiate of potash enters the circulation in the most rapid manner, and in a very short period gives a blue colour to the valves of the heart. There is something very mysterious in the *modus operandi* of those poisons that are generally believed to cause death by a direct impression on the brain, made through the medium of the nervous system. The prussic acid, for example, is supposed to produce its deleterious effects entirely in this manner. Dr. Stevens is of opinion, that these effects are produced through the medium of the blood, since it is as suddenly fatal when mixed with the blood in a vein as when it is injected into the carotid artery.

It is destructive, likewise, to animals that have neither brains or a nervous system. "It is very evident," says the Doctor, "that all those agents that enter the circulation must produce their effects on the solids chiefly through the medium of

* Philosophical Transactions, 1812.

the nutritious fluid. Mercury, alcohol, salts, acids, alkalies, camphor, verdigris, sugar of lead, &c. &c., have all been actually detected in the blood either of men or animals, that have been using these agents, and most of them found in the secretions. Now, as the nerves have no tubes, it is very clear that the actual agents could not get either into the blood or from these into the secretions merely through the medium of the nervous system. And, in fact, so many of those active agents which *cause*, and so many of those remedies that *cure* disease, evidently enter the circulation and produce their effects on the whole system through the medium of the blood, that it is difficult to ascertain which of them do not produce their effects, either in part or entirely, through the medium of the circulating current, like the air which we breathe or the chyle which enters the circulation, and supplies the blood with material for the nourishment of the whole body."

Many proofs of change in the blood in different diseases can be produced. Gendren has shewn that in inflammatory diseases the serum of the blood often contains twice as much albumen as in a state of health, whilst in debility the albumen is very much diminished. He supposes, as likewise does M. Andral, that it is also altered in quality.

The proportion of the watery part of the blood also varies in health, but more particularly so in disease. This is remarkably shewn in cholera, dysentery, and in dropsy. The colouring matter of the blood undergoes some alterations during febrile and malignant diseases. It has been lately shewn by Dr. Stevens, that such changes have an intimate connexion with the proportion of the saline constituents of this fluid, a diminution rendering the blood dark, and *vice versâ*.

A disease bearing the character of an enzootic shewed itself about the middle of the year 1831 among the horses of one of the largest proprietors of the Somme. M. Renault, who is charged with the direction of the hospital at the school at Alfort, was sent for to examine and to treat it. At the time of his arrival the disease had prevailed for nearly three months; and out of one hundred and thirty horses which were in the stable

at the time of its development, forty-nine were dead, and fifteen diseased, eight of the latter were destroyed, and the examination of them served to explain the nature of the disease; for on comparing the observations which he made on the carcasses of the dead with the symptoms and character of disease observable in the living patients, he was assured the *primitive alteration, the essential malady, was in the blood,* which, whether taken from the dead or living animal, covered his hands without reddening them, and either did not coagulate, or formed a mass of a dirty grey colour, and contained a very small portion of fibrine, which was easily proved by analysis.

These alterations were yet more perceptible in the horses that had been diseased for some time. There was so little cohesion between the organic elements of the blood, that, even during the life of the animal, the fibrous filaments separated from the liquid whenever it was agitated, although in the slightest degree*.

A striking fact shewing the relations between the composition of the blood in the state of disease, and the secretions which depend upon it, was discovered by Chevreul. Children are subject to a disease characterized by induration of the cellular tissue: on analyzing the fluid secreted by this tissue, he found that it contained a substance which coagulates whilst cold. He has also recognized its existence in the blood of the same patients, and this in great proportion. It is the same with the colouring matter of jaundice, which frequently accompanies this disease. Thus, morbid secretions are connected with the constitution of the blood by the co-existence of the same principles in this and the other fluids.

On making an analysis of the blood, we discover it to contain a variety of particles, differing in bulk, weight, figure, and tenacity—some watery, others inflammable, and most of them greatly inclined to putrefaction, and of an alkaline nature. Blood in a sound state, not injured by putrefaction, or by too violent a degree of heat, is neither alkaline nor acid, but mild and gelatinous, and a little saltish to the taste; yet in some diseases it is very

* See VETERINARIAN, vol. v.

acid, and comes near to a state of putrefaction; and in others its watery particles are frequently alkaline.

These examples might be multiplied, but doubtless enough has already been stated to prove our position, that in all diseases arising from ærial poison the blood is contaminated.

The blood may become diseased in different ways; the digestive system furnishes a great number of them, but the origin of all of them cannot be referred to that source. The course which is taken by the atmospheric air in respiration, and the absorption of impure substances which pass along with it in greater or less proportion into the blood, is evidently one source of the changes in this fluid. It is by the latter channel, and likewise by the imbibition of the absorbent vessels on the surfaces of the body, that all contagions spread; the virus of glanders, and the various epidemic diseases to which horses are liable; the virus of small-pox, of the plague, and other pestilential fevers in the human subject.

An exposure for a few minutes to an atmosphere loaded with marsh effluvia of an entirely noxious nature, may produce a protracted ague: even a few inspirations of an atmosphere rendered foul by exhalations from the human body, have been known to produce, in persons previously healthy, immediate nausea and vomiting, followed by severe and pernicious fevers.

A glandered horse may contaminate the air of a stable to such a degree, that horses breathing the same air may become infected with the disease, although the infected may never come in contact with the infecting horse. Fortunately glanders is not so infectious as some other diseases to which horses are liable, otherwise the breed would soon become extinct.

The epidemic diseases which attack horses, particularly in the spring of the year, spread from individual to individual with the most surprising rapidity. We cannot explain the particular states of the atmosphere under which the various epidemics occur. They may be said to be conveyed on the "wings of the wind," but still their changes and circumstances are only known by their effects. We observe them spread over a district, and then as suddenly disappear.

This species of attraction has been called a new power. It is a power that enables the atmosphere to attract suddenly, and with force to windward, and to a considerable distance from the spot whence they originate: indeed, such is the surprising force of the power, that metallic particles are in some instances attracted by the air, as persons of weak constitutions have been affected with mercury merely by sitting for a few hours near those who were in a state of salivation.

Mr. Youatt, in his lectures delivered at the London University, mentions an epidemic which prevailed in the year 1815; and so dreadful and sweeping was the disease, that three horses out of five that were attacked died.

Among neat cattle its ravages are too notorious, and its characters too well marked to need any description: "and it may be considered," says Mr. Blaine, "as a full proof of the liability of the horse to the same, it having occurred, that, during the ravages of the malignant epidemic among cattle, horses have also become affected; though it must be allowed that this has seldom taken place," and, on the contrary, "in some seasons there has been undoubted evidence that horses have fed and housed among infected kine with impunity. But that, not only does the horse generate and produce the epidemic with a true malignant character in his own person, but that he does also now and then receive it by the medium of affected cattle, there is also full proof."

The different ancient authors support Mr. Blaine in his opinion. Lucretius, who describes the plague of Athens, speaks of a malignant epidemic disease affecting almost every animal. Homer likewise describes one of these dreadful scourges, as attacking men and animals indiscriminately at the siege of Troy.

—— μετὰδ' ἰὸν ἕηκε
Δεινὴ δὲ κλαγγὴ γένετ' αργυρεοιο βιοῖο.
Ουρῆας μὲν πρῶτον επωχέτο, καὶ κύνας αἰγούς,
Αὐτὰρ ἔπειτ' αὐτοῖσι βιλος εχεπευκὲς εφιεὶς.
Βαλλ'.

But the most interesting account of these sweeping diseases is one that occurred throughout Germany and Italy, described by Virgil*.

* See Georgics iv.

"The whirlwind," he says, "that brings on a wintry storm, rushes not so frequent from the sea, as the plagues of cattle are numerous. Nor do diseases only sweep away single bodies, but also whole folds suddenly, the offspring and the flock at once, and the whole flock from the first breed." It would occupy too much space to give the whole of his description; we must therefore content ourselves with a part. It is represented by this poet in most sublime expressions, and can never be enough admired. He describes the dreadful murrain "as a doleful sweeping plague, arising from the distemper of the air, which grew more and more inflamed through the whole heat of autumn, and delivered over to death *all the race of cattle,* all the savage race; poisoned the lakes, and tainted the pastures with contagion."

His description of the noble horse, labouring under this disease, is inimitable: we submit Sotheby's translation of it, but no translation can possibly give an idea of the beauty of the original.

Forgetful of his fame, the victor steed
Loathes the translucent rill and flow'ry mead:
Low drops his ears, his hoof oft beats the ground,
His wasted limbs in fitful sweats are drown'd;
Sweats that, as dying pangs the victim seize,
With clammy chillness life's slow current freeze.
On his dry skin the hairs in bristles stand,
Rise to the touch, and roughen on the hand.
Such the first symptoms: but the fell disease
Marks by more horrid signs its dire increase;
The eyeball glares, deep breath with hollow tone
Heaves the long flanks, and bursts with frequent groan.
The tongue furr'd o'er, th' obstructed palate fills,
And from the nostrils sable blood distils.
Wine, pour'd through horns, that seem'd to soothe the pest,
But lull'd awhile to transitory rest.
This their last hope; yet fruitless to assuage,
But gave each torturing pang recruited rage;
While with bare teeth the steed infuriate tore
His limbs in death, and bath'd his jaws in gore.

[To be continued.]

Extracts.

Observations on Stercoral Colic, produced by Stercoral Concretions in the Horse.

By M. Clichy, *V.S*, *at Joinville.*

In publishing some observations on the balls, or concretions, called stercoral, my intention is less to attract attention to the nature or causes of these productions, or the symptoms by which they are accompanied, than to make known the good effects of a medicament (tartarized antimony), which has not yet, so far as I know, been sufficiently employed in the treatment of this disease; and the administration of which, in my hands, has been followed by the happiest effects.

I must premise some general considerations in as concise a manner as possible, on the principal results of my experience in this matter: particular facts will follow by way of illustration.

Of all the maladies designated under the generic term, *colic*, next to those called inflammatory, stercoral colic is the most serious, and the most difficult to remove. It is so called from being caused by a mass of indigested food, which accumulates, and forms a ball of greater or less size and hardness, and which ordinarily is retained in the flexors of the colon, or in the cells of its floating portion, at a little distance from the rectum. It distends the portion of the intestinal tube in which it is found; it obstructs the passage through it; it arrests the course of the excrement; and produces an intense inflammation of that part, which soon runs on to gangrene, and death is not slow in arriving. As the continuance of these foreign bodies in a portion of the intestine excites permanent contraction there, on account of the irritation which they determine to that spot; and as this contraction (a true strangulation) is constantly found before the concretion; it follows that we cannot do otherwise than consider this contraction as a powerful cause of obstruction. For the concretion once formed, and in some sort lodged there, the portions of alimentary matter, finding an obstacle to their course, are arrested there, and, collecting together, they increase the size of the concretion and the distention of the intestine. Thence arise irritation, inflammation, sphacelus of the strangulated portion of the intestine, complete obstruction, &c.; and a little afterwards death. It is evident in effect that the concretion does not form itself in a moment, and does not all at once obliterate the intestine. At the beginning it opposes only a slight

obstacle to the passage of the alimentary matter, and the symptoms extend not beyond slight and transient colic; and, in general, the different organic functions do not appear to be sensibly altered.

It is ordinarily in the lower part of the digested tube, and oftenest in the floating irregular portion of the colon, or the beginning of the rectum, that stercoral concretions are found.

The symptoms of stercoral concretions do not present any constant or regular march; for, under certain circumstances, a few days suffice for the disease to reach the greatest degree of intensity. This depends, without doubt, on the age, the state of irritability of the patient, the greater or less absolute volume of the concretion, and the different substances which have been administered to the animals, and that too frequently, before the veterinary surgeon is consulted. In general, the colic is less violent than in most other species of that disease. We rarely observe any ungovernable convulsive movements. The animal does not begin to struggle in any remarkable manner, until the concretion has acquired sufficient volume to press upon and to irritate the coats of the intestine. It is then that he looks anxiously at his belly, and points out the very seat of the evil, and that he lies down and rises up continually, but without rolling or beating himself about. The appetite, although diminished, yet remains; but the disease proceeding, the animal becomes dispirited and listless; his eyes are dull, and seem as if they were buried in the orbits; he groans every now and then; the pulse is small; the flanks heave, and the belly swells. The disease still proceeding, the animal becomes more dispirited; there is fever; the pulse is concentrated, and soon becomes imperceptible. An extraordinary enlargement of the belly; respiration exceedingly laborious; general or partial sweats, whether cold or hot; the eyes weeping; the pupils dilated; the staggering manner in which the animal walks or even stands; the position which he assumes, seeming to sit upon his haunches with the fore legs stretched out, and the head elevated; these are the precursors of approaching death.

The introduction of the hand into the rectum will demonstrate the existence of the stercoral concretion, which will be found in the pelvic curvature of the great colon, or the last cells of its floating portion.

The duration of stercoral colic is not more than seven or eight days. By employing in time an energetic treatment, we may sometimes succeed in promptly removing the cause; but some animals are carried off in two or three days by unscientific treatment.

The prognosis is always unfavourable when the respiration is short and frequent, the swelling considerable, the pulse not to be felt, the body cold, and there are partial or general sweatings, or the animal trembles all over, and it is difficult or impossible to move him.

On opening horses that have died of this disease, we constantly find, and oftenest imbedded in one of the cells of the floating portion of the colon, a mass of stercoral matter, which constitutes a concretion of considerable hardness, and the form and size of which are variable. The part of the intestine occupied by this concretion presents a dilatation, proportioned to the volume of the ball. The corresponding mucous membrane is thick, black, and sphacelated: I have never observed any rupture of the intestine.

The causes of stercoral secretions are numerous. Old animals are in general most exposed to this disease, because the food having been only imperfectly submitted to the operations of mastication and insalivation, arrives at a stomach, the digestive action of which is impaired by age; and thus only grossly masticated, and no longer finding in the gastric juice a sufficient solvent, is imperfectly elaborated, and consequently apt to be arrested in its progress, and to collect together and form concretions in these lower passages. But that which contributes most of all to the formation of these concretions is certain aliments, such as the green leaves of some vegetables; the clippings of vines; and more particularly the use of wheat, and especially that portion of it which has been deprived of its farinaceous principle. The frequent usage of this food in our country is the chief cause of stercoral colics.

Treatment.—At the appearance of the first symptoms, it is often sufficient to give, and to continue during several days, frequent mucilaginous drinks; to whiten the water with the farina of rye or barley; to administer emollient injections composed of solutions of soap, or neutral salts; and to prescribe a very restricted diet. Little bags of boiled wheat often renewed, and applied to the parietes of the abdomen particularly, over the left flank, will procure a little ease when the horse is in pain. But if the benefit produced by this treatment is but momentary, and is not sufficient to cause the expulsion of the stercoral concretion, there is nothing more to do than to attempt to palliate that which we cannot cure; and then at the end of some time the symptoms will reappear under a severer character, and attended by more pain.

It is after having made use of this antiphlogistic treatment for several days, that I have recourse to the tartrate of potash

and antimony in variable doses, as described in the following cases.

Having been in practice about twenty years, and having had frequent opportunities of observing this disease, I am assured that the emetic tartar is the most constantly and rapidly efficacious in removing a stercoral concretion. I would almost call it a specific in these cases.

CASE I.

An entire horse, six years old, had occasionally, for several days, light colicky pains, with loss of appetite. They had given him some injections; and on the seventh day they brought him to me.

He could scarcely walk, on account of the extraordinary swelling of the belly. The respiratory movements were short and spasmodic; the pulse small and irregular; the pupils dilated; the extremities cold. When placed in the stable, he stood with his legs straddling; the head extended; and the breathing laborious.

Prognosis.—Death approaching; in fact, the animal died some hours afterwards in great agony.

Post-mortem examination.—The different splanchnic cavities offered nothing particular. The mucous membrane of a part of the colon presented a gangrenous appearance, and that intestine contained, in one of its cells, a mass of hard stercoral matter, of a round form, and from about twenty-one inches to two feet in circumference. It was composed of unmasticated meat, and half-digested grassy matter.

CASE II.

I was called to attend on a horse seven years old, which, during the last twelve hours, had done nothing but lie down and get up again, looking at his flank from time to time.

The appetite was quite gone.

Recognizing all the characters of stercoral colic, I made them take the horse to my establishment, and I submitted him during four or five days to a soothing regimen; giving him warm mucilaginous drinks and emollient injections, &c., but without any benefit. I then administered seventy-two grains of the emetic, which produced a salutary crisis, and some days afterwards the cure was complete.

CASE III.

Eight or ten months afterwards, they brought the same horse to me, attacked, as they supposed, by the same disease. He

had, the proprietor said, the very same actions as before. A careful examination did not leave me room to doubt of the nature of the affection; the symptoms which I had observed on the first occasion were manifested anew. The same mucilaginous drinks and injections were administered; and he died on the fourth day, in more intense agony than is usually observed in these cases.

On opening the colon, there was found a considerable mass of hard stercoral matter; the portion of the intestine which contained the concretion was black and gangrenous; the remainder of that viscus presented traces of intense inflammation.

CASE IV.

An entire horse, six years old.

When they were about to feed this horse in the morning, it was observed that he had pawed his litter very much in the night, and that he seemed uneasy; but as he ate and drank as usual, and seemed easy after this feed, they took him to his work. At noon he did not feed so well; the colicky pains had returned, but, although permanent, they were less intense than in the morning.

I was sent for. He had warm mucilaginous drinks, emollient injections, &c.; but he became worse and worse, and died on the seventh night.

On examining him after death, I found a stercoral concretion in the usual situation.

CASE V.

A little while after the death of this horse, the same proprietor brought me a second, which had been attacked by the same malady. The symptoms were the same, and the mode of treatment which I adopted the same; but seeing no amendment after a few days, I administered forty-five grains of emetic tartar in some mucilaginous decoction. This dose not having produced any evacuation at the expiration of twelve hours, I gave fifty grains more: evacuations were now produced, and a few days afterwards the cure was complete.

CASE VI.

An entire horse, eight years old, was suddenly seized with violent colic, which returned several times during the day. The proprietor took but little notice of the case, except that the horse was not worked for several days; but, seeing that the symptoms became more aggravated, he caused him to be brought to me.

The horse, which, at the first moment of an attack, lay down

and rose again continually; at length remained down looking at his flank; and then it was with great difficulty that he could raise himself. Sometimes he would remain a long time sitting on his haunches, and in that position he took a little white water and searched for something to eat.

He had mucilaginous drinks, &c.

He became gradually worse until the fifth day; I then administered fifty grains of emetic tartar in an emollient decoction. Twelve hours afterwards, there being no change, I gave a second dose; some hours after that the horse was much agitated, and pawed with great violence. In the course of the sixth day there was an evacuation of a great quantity of half liquid fœtid matter, of a very unpleasant and pungent smell. The evacuations, preceded by colicky pains, continued at least every hour, for four-and-twenty hours. The animal was dull—the pulse imperceptible—and he frequently shivered all over. On the following day he was better; but he would take only a little white water. On the ninth day he began to eat; the dung was naturally formed; and on the tenth day he was returned to his master, with a recommendation to permit him very slowly to return to his usual diet.

CASE VII.

An entire horse, seven years old, was seized with slight colicky pains, with loss of appetite, and heaving of the flanks. He was entrusted to the care of an empiric, who, for three days, gave him nothing but nutmegs, infused in wine, with a little brandy. He was then brought to me, and I recognized unequivocal symptoms of the existence of a stercoral concretion. Having tried the antiphlogistic treatment for four days without benefit, I administered fifty grains of tartarized antimony on the fifth day. Ten hours afterwards there were copious and fœtid evacuations, and in a few days he was well.

CASE VIII.

In this case, which was one of particular violence, and which scarcely left me a hope of doing good, I gave at once ninety grains of the emetic tartar: ten hours afterwards the horse began to purge, and the evacuations quickly followed each other; each preceded by colicky pains, for forty hours. At last the efforts were so frequent, that the animal suffered dreadfully. This superpurgation was combatted by the ordinary means; the state of convalescence was very long, but at length the cure was complete.

CASE IX.

A horse, ten years old, had colicky pains for some days, which returned regularly two or three hours after feeding. They were accompanied by a slight enlargement of the abdomen, which disappeared after fifteen or twenty minutes' walking exercise. The proprietor had given him mucilaginous drinks and emollient injections without effect. I gave at once sixty grains of emetic tartar, and thirty more twelve hours afterwards. Six hours after the second dose, purging commenced. In four days he was returned to his owner perfectly well.

M. Clichy, after relating three other successful cases, concludes by stating, that it is probable that many horses would have died of stercoral cholic, if he had neglected to employ the emetic tartar, and perhaps that others would not have died if it had been used.

Recueil Méd. Vét., July, 1833.

With the exception of the three last cases recorded by M. Clichy, we have inserted the whole of this somewhat unsatisfactory paper. We were at a loss to conceive in what manner the relief was obtained; for, when we read the first successful case, we were inclined to think that it was by the expulsion of the concretion itself; yet we wondered that M. Clichy did not say so: but we afterwards found, or rather guessed (for the author does not mention even this), that it was by means of a sudden dissolving of the ball, through some strong chemical action between the tartarized antimony and the contents of the ball. But all this we are left to guess at. In our practice we have never found emetic tartar act as a purgative in these small doses; and we have rarely or never known these concretions dissolved in the act of simple purging; although they have sometimes, as at first we imagined to be the case here, been brought away bodily. We rather wondered, too, that if tartar emetic was this boasted specific, that M. Clichy should not sooner have recourse to it; and that he should lose a horse or two, and hazard others, by prolonged experiments with his inert mucilaginous drinks and emollient injections. However, it is a valuable paper; and if emetic tartar is this almost-specific in cases of stercoral concretion, the profession will be grateful to M. Clichy for the aid he brings in cases hitherto so desperate.—Edit.

Rupture of the Liver occasioned by a Kick.

By M. Millot, *V.S., at Vitteaux.*

On the 10th of May, 1829, I was sent for at four o'clock in the afternoon, to visit a horse five years old. He was uneasy; pawed the ground with his fore-feet; his coat stared; his extremities and ears were cold; his nostrils dilated; and the mucous membrane pale; the expired air cold; the flanks agitated; respiration accelerated; continually striking the ground with his hind feet; he gazed at his flanks, and had light shiverings; he sometimes lay down on his right side, and then groaned. Percussion on the abdomen, scarcely felt on the right side, was painful on the left: the pulse was seventy, small and concentrated; the animal refused all food.

I ordered two bottles of a cold infusion of camomile flowers and mint leaves, to each of which was added a spoonful of sulphuric ether. Emollient injections; frequent hand-rubbing; and frictions over the limbs with equal parts of essence of lavender and turpentine.

I returned at eight o'clock. He was standing up, fixed in his place, his muzzle resting upon the manger: the pulse was very small and frequent. On pressing on the lower part of the flank on one side, and causing the other to be supported, we heard a peculiar noise, which announced the presence of a fluid in that cavity. The servant said that the animal had fed as usual at nine o'clock, and drunk at ten, which he had not seen him do afterwards.

We suspected peritonitis, and ordered four pounds of blood to be abstracted. The blood ran slowly, although the incision was large: an emollient cataplasm was then placed under the belly, and handrubbing and irritating frictions applied to the limbs.

At one o'clock in the morning the groom who had been left with the horse called me, and said that he was much worse. He had lain down several times, and then had raised himself again, placing his fore feet in the manger: he remained some time in that position.

On my arrival I found him with his head resting on the bottom of the manger, and he was pushing with his forehead against the wall; his limbs were separated as far as possible from one another, and the centre of gravity thrown forward: there was shivering and spasm of the principal muscles. My efforts to make him quit that position occasioned a new access of spasm: he pawed violently for nearly five minutes, and then replaced himself as

he was before. The pulse was very slow and small; the oody was cold all over; the respiration accelerated; the pupil dilated. On striking the sides of the abdomen, which were no longer painful, the presence of a fluid in that cavity was easily recognized. He remained in that position until half past three, when he began once more to paw; and died a little while after.

The body was opened two hours after death; it was almost cold, the mucous membranes were apparently discoloured, and the abdomen was swelled. On the left hypochodrium, at the base of the fourth and fifth false ribs, there was a large ecchymosis, nearly five or six inches in diameter, and which appeared to be the result of a violent contusion before death from a blow or a fall. The abdomen having been cautiously opened, we found in its cavity more than two gallons of black blood, the greater part of which was coagulated. We carefully raised the intestines, and sponged the blood from them, and assured ourselves that there was no rupture of any vessel belonging to them: they contained in them very little blood. The mucous membrane of the intestines offered nothing remarkable, except its paleness: it was the same with the spleen and the urinary organs; the liver alone was the seat of serious lesion. On the left part of its anterior face, eight inches from its point, at the place where this organ rests on the portion of the hypochondrium on which was the ecchymosis, which I spoke of just now, there was a solution of continuity, with irregular and fringed borders; a true rupture running across the liver, and more than two inches in length: clots of blood were contained within it, and hung from its edges. It was evident that the hæmorrhage proceeded from this opening, and its connexion with the ecchymosis of the hypochondrium could not permit us to doubt that it was produced by external violence.

The viscera of the chest were more or less void of blood, like all the others, but not otherwise altered.

Not being able to believe that such a lesion could be spontaneous, or rather, being convinced that it was caused by a blow or fall, of which the groom could not be ignorant, I questioned him very closely; and at length extracted from him the following account:—That on the preceding day, contrary to his usual custom, he had led this horse to drink, with two others belonging to the mail, and which could never be put together without attempting to kick each other. That he had not been able to prevent them from doing this in the way from the stable to the river, or even when in the water; that he rode this horse, and observed that it was several times kicked in the chest by the

others, but nevertheless he had returned to the stable without appearing injured.

He died eighteen hours after the accident.

Recueil Méd. Vét. July 1833.

Ointment for the Grease.

By M. Rodier, *V.S., Isle of Bourbon.*

℞ Sub-acetate of copper, one part
Lard, four parts
Honey sufficient to give it the consistence of pomatum;

Mix carefully, and preserve for use.

As in the ordinary treatment of grease, fomentations and emollient poultices will precede the use of this ointment some days when there is much local inflammation. The ointment should be spread over the part as thinly as possible two or three times a-day, until a cure is effected. At each application the activity of the ointment should be a little diminished by adding to it a small quantity of honey, especially when we begin to perceive the good effect which it produces. The ointment remaining on the part should be washed off with a little warm soap and water before a fresh quantity is applied; and during the treatment, the diseased legs should be kept as much as possible from the wet.

Recueil Méd. Vét., July 1833.

American Horses and Travelling.

The following account of the American horses is related by Adam Fergusson, of Woodhill, advocate, made during a tour in Canada, and a portion of the United States, in the year 1831. This gentleman is a director of the Highland Society of Scotland. His visit was for the express purpose of satisfying the society regarding the actual condition and prospects of agricultural settlers in these countries; his report may therefore be considered a just one, and free from that partiality which has so frequently characterized the publications of trans-atlantic travellers:—"Scarce had I set foot on shore," says Mr. Fergusson, "in New York, when my eye was attracted to the figures of the horses in the hackney coaches and drays, and every subsequent opportunity tended more and more to delight me with the breed of horses, both in the States and Canadas. Mr. R——r had about twenty in his stables, part of them, of course, employed with the oxen on the farm; but all of them, in point of shape, figure, and action, such as would command, in Britain, the

highest price given for carriage nags. A pair of very beautiful handsome brown geldings, which I saw in one of his waggons, cost him 200 dollars, or £45, and which horses I am confident in London would have readily fetched 120 guineas. Some of his saddle horses were uncommonly neat; and a chestnut colt, intended for his own charger, as general in the militia, was one of the finest and strongest thoroughbreds I ever saw. I may remark, too, that this stud was by no means to be regarded as the expensive hobby of a rich man; for, in every part of the country, the same superior animals were to be met with, and, from the team of almost an ordinary farmer, horses might be selected fit to grace the *four-in-hand.*"

The following description of waggon travelling is not a little amusing:—

Mr. Fergusson, it appears, hit upon the very worst period of the year (spring) for travelling in America; for, during the winter months, the sledge conveys the traveller along with rapidity and ease; and in summer, the roads being dry, and having got their repair for the season, are tolerably smooth; but in spring, matters are certainly bad enough. The road to La Prairie was in such bad condition, that no coach could attempt it; two waggons were therefore substituted in its place for the conveyance of the mail and passengers. "The day," says our traveller, "was fine, and our horses all we could desire; the coachmen seemed both smart and civil active fellows. Happening to ask the distance to Montreal, he received for answer, '*Nine miles by water, sir, and the rest by mud;*' a description which our woful experience proved to be too correct.

"When we had dragged through some half dozen miles of *mud*, and matters seemed rather to get worse than better, the coachman entrusted with the mail proposed to our driver that they should leave the *improved* road, and try the *old line.* To this it was objected, that the old line was now closed by authority, and that notice had been served upon them of its being shut, and that part of it was actually an enclosed field. The proposal, however, after a little more scrambling, was acceded to. We turned down a sort of by-track, and I had very soon a specimen, which under evidence short of my own senses would have been hard to credit, of what men and horses in this country will get through. A rough and swampy rivulet lay between us and the gate of the field which had been shut by *authority*, and where we now saw two stout fellows drawn up, armed with large stakes, to prevent our ingress. The impediment of the brook detained us not a moment; down we went, plunging to the axles through the water, and up the steep and rushy banks to the

gate, where we were brought to a parley. Many high words passed with the farmer, and, as he had both law and equity on his side, I was prepared for another rough job through the brook, when the guardian of the post-bags, in a most resolute tone, swore he would take the responsibility of shooting any man who stopped the *mail*, and, suiting his action to the word, produced his pistol. This formidable hint took immediate effect, and, the gate being thrown open, we entered in triumph. Our waggon still kept the van, and, crossing the ploughed field, we soon observed a new wattled fence, four feet in height. We kept on at a steady trot, and, as we approached the fence, and my curiosity was excited to the highest pitch at a crack of the whip, and "Come, Harry, boy," addressed to one of the leaders, the horses absolutely cleared the fence in true *Meltonian style*, and we at their tail, waggon and all, pitching like a boat in a heavy sea, and clinging to whatever we could lay hold of, to escape rolling overboard." Mr. Fergusson afterwards met with the proprietor of the stage; he recounted to him his adventure, commending the skill of his men and the activity of his horses. "No coachman," he replied, "could manage that stage, unless they have *grown up upon it*." His horses cost him from 100 to 120 dollars each. He enters them at five years old, and, by gentle treatment, they speedily become tractable and handy, ready *to charge an ox fence* when required.

Medical Jurisprudence.

Sale of Horses by Auction.

A. B. is a veterinary surgeon, and undertakes the sale of horses for any persons who choose to employ him for that purpose. The sales take place periodically by auction; the auctioneer being employed by A. B., and who makes a certain charge to his employer for his trouble, &c. It occasionally happens that the purchasers refuse to complete their purchase; sometimes on the ground of unsoundness, contrary to the warranty of A. B.'s employer himself at the time of sale; and sometimes from their wish to get rid of their bargain. A. B. wishes, therefore, to be advised,—

First, Whether, in the case of the sale of a horse so warranted by his employer to be sound, but which turns out not to be the case, the purchaser can maintain an action against A. B. or the auctioneer, ; or whether his remedy is confined to A. B.'s employer alone for a restitution of the purchase-money?—And when the purchase-money be not paid, and the horse is returned

to A. B., whether A. B. does not discharge himself of all responsibility to his employer, by returning him the horse, or by leaving it at some place to be taken care of for him, giving him notice at the same time of having done so?

Secondly, Whether, in the case of an unwilling purchaser, A. B.'s employer can sue him for the purchase-money, or whether his remedy is against the purchaser only?

We have taken some pains to ascertain what is the law of this case, for it is of some importance; and we are enabled to give the following, on very great authority: —

If an auctioneer sells without disclosing his principal, he is personally liable for the non-performance of the contract.

If an agent employs an auctioneer to sell the goods of his principal, but the sale is so conducted that to the purchaser the agent appears as the principal, the real principal being unknown, the agent incurs a like personal responsibility for the non-performance of the contract.

These instances are exceptions to the general rule, according to which the contract binds the principal only, and not the agent. But if, as here, the real principal is known to the purchaser at the time of the purchase, and takes upon himself to warrant the article that is sold, the agents cannot be personally liable, unless it can be proved that fraud has been practised by them. Y.

Miscellanea.

Account of the Annual open Dinner of Veterinary Practitioners.

On the 12th ultimo the open annual dinner of the Veterinary Club was held; and although the numbers of the resident members were somewhat diminished by indisposition, and the loss of relatives, a fair proportion of them was present, and they were joined by several zealous brethren from the country. The meeting was an exceedingly pleasant one, and afforded, in a variety of points, a specimen of the advantages to be derived from these periodical assemblies of the practitioners of an infant art.

TO CORRESPONDENTS.

The resident Editor hopes, that his continued indisposition, and now the temporary loss of the use of both hands, will be considered an apology for any trifling inaccuracies in the present number, and also for apparent neglect of two or three correspondents, both public and private.

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XXXVII.

The Cerebellum—Pons Varolii—Medulla Oblongata, and Introductory Observations on the Nerves.

I HAVE stated in a former lecture, that there is only an apparent difference in the relative situation of the cerebrum and cerebellum in the biped and the quadruped; that in both the cerebellum is the portion nearest the foramen magnum, and under which the crura cerebri must pass in order to arrive at the medulla oblongata and spinal chord. I have also spoken of the relative size of the cerebrum and cerebellum in different animals; in the biped, the cerebellum being comparatively small, one-ninth part only of the bulk of the cerebrum—in the ox the same proportion being observed—the cerebellum increasing in size in the dog, the horse, and the sheep, until, in the last animal, it becomes a full fifth part of the weight of the brain. We will now see what light a consideration of the structure and functions of the cerebellum will throw on the matter.

Description of the Cerebellum.—The cerebellum is apparently and partially divided into three lobes; two of which alone are visible in the human being, while the third or central one is covered by the lateral ones: but as the whole cerebellum increases in bulk in the quadruped, the central lobe does so in a peculiar manner, and is apparently broad and prominent. Its anterior and posterior extremities *(the vermiform processes)* are bulkier and more elongated. The vermiform processes of the central lobe are quite separated from the lateral lobes; and both of them curl up like the extremities of a great worm under the base of the cerebellum: the separation extends a little way beyond the processes, and more particularly from the posterior process. Before, however, we arrive at the centre of the cerebellum from the posterior process, and ere we have scarcely left the anterior one,

the division into lobes is lost; and we have one connected body with deep sulci running in various directions, but mostly transversely. The convolutions, less marked in the brain of the quadruped than in that of the human subject, are far more prominent, and the sulci deeper in the cerebellum of our patients than in that of man. Instead of the fissures not being more than a few lines in depth, some of the lobuli may be separated almost to the centre of the cerebellum. The division between the cineritious and medullary portions is more distinctly marked than in the cerebrum: the cineritious is here also the cortical or outer layer, lining either the external or internal surface of the lobuli; while the medullary substance occupies the central part. Here also, more evidently than in the cerebrum, the cortical is in detached portions, and the medullary connected together, and tending towards the centre through the whole of the cerebellum; so that when we make a vertical incision through either of the lobes, we have a beautiful resemblance of a tree (the *arbor vitæ*), the trunk and the branches composed of medulla—the foliage consisting of cineritious matter.

The Crura Cerebelli.—The trunk from each side of the cerebellum takes a direction anteriorly and downwards, and reaches or rather forms the base of the *tuber annulare* or *pons varolii.* These trunks are the *crura cerebelli*, conveying or combining the influence or power of the cerebellum. These crura prolonged, and widening as they come more into sight, and meeting on the centre of the base of the brain, constitute the tuber or pons. The crura cerebelli are meeting each other transversely, and forming a kind of arch or bridge, and the crura cerebri are passing under the arch. What admixture of substance or influence takes place, I will presently inquire; but, first of all, I must speak of the function of this little brain.

Function of the Cerebrum and Cerebellum.—I have endeavoured to trace the connexion between the medullary and cineritious portions of the brain, and the prevalence of the animal or intellectual principle. My conclusions, advanced with some degree of hesitation, were founded on the seeming connexion between the quantity of cineritious matter in the common sensorium, and the degree of intelligence which the animal possessed. In proportion as the medullary substance prevailed, the quadruped stood low on the scale of intelligence; and so far as we could ascertain it, proceeding upwards from the ox and the horse to the dog, in proportion as the cineritious matter increased, the reasoning faculty was developed. Other arguments drawn from experiments on living animals I purposely reserved, until we were enabled to compare these two divisions of the brain together.

The Experiments of M. Fleurens on the Brain.—Effects of removal of Parts of the Brain.—M. Fleurens has instituted a connected course of experiments on the functions of the brain, the result of which is, to a certain extent, satisfactory. He laid bare a portion of the brain, and he began by pricking the hemispheres; there was no muscular contraction—no symptom of pain. He cut off a portion of one of the hemispheres in an horizontal direction; still no contraction—no pain. The animal seemed to be unconscious of the affair. He cut yet deeper and deeper; the animal evinced no sign of suffering. At length he reached the medullary part—he removed the corpora striata, and the optic thalami, and yet there was no pain. This, gentlemen, will not, perhaps, appear incredible, if you recollect that although, according to our opinion, the hemispheres of the brain are the organs to which impressions on the sensitive nerves are conveyed, and where they are received and we are rendered conscious of certain sensations, it is only *through the medium of the nerves* that this is effected, and *there are no nerves* in the portions which we have pricked or removed. Cut off in any part nervous communication, and you destroy sensation; and so here there is no feeling of pain, for there is no nerve to give notice of injury. He ventured deeper—he pricked the corpora quadrigemina, and then crying, and trembling, and convulsions, ensued; and these increased as he penetrated deeper still into the medulla oblongata:—the senses of sight and hearing were destroyed, and stupor stole over the animal, and he was incapable of voluntary motion.

Effects of Pressure.—Pressure was made on the hemispheres laterally. No effect was produced, the animal was altogether unconscious of it. Pressure was then made vertically, and insensibility speedily ensued—not, however, total insensibility, for there remained a faint dull sensation; and the animal, when violently excited, could be roused to the performance of certain actions—the quadruped could walk if pushed along, and the bird could fly when thrown in the air. Professor Mayo says, that "if a section be carried through the striated portion of the corpus striatum, the animal will spring forwards, and continue to advance in a straight line till it meets an obstacle, when it still preserves the attitude of one advancing."

Experiments on the Cerebellum.—M. Fleurens next pricked the cerebellum—there was neither muscular contraction nor pain; he cut off portions of it, but the animal did not appear to be aware of the injury. When, however, a deeper incision was made, when the experimenter cut far into the trunk of the arbor vitæ, there was strangely irregular action of some portion of the

frame. One of the pedicles of the cerebellum (crura cerebelli) was divided by M. Majendie; the animal commenced a rapid rotatory motion on its axis, which it continued until prevented by some mechanical obstacle. A deep section of the cerebellum of a pigeon was made, and the bird began to walk and fly backwards. Some of these experiments were curiously diversified by MM. Fleurens and Majendie: a deep section was made in the mesian plane through the cerebellum of a rabbit; the eyes rolled in an extraordinary manner, and the animal swung from one side to the other, as if unable to balance himself. A vertical section was made on one side, and the animal rolled over and over incessantly; the right eye was directed downwards and forwards, and the left eye upwards and backwards. A similar section being made on the other side, the animal stopped, and the eyes resumed their natural direction. M. Majendie divided the crus cerebelli in a rabbit, and for eight days (far, far too long!) that this animal survived the injury, it continued to revolve upon its long axis, unless stopped by coming in contact with an obstacle, and when stopped, it ate upon its back with its mouth upwards.

Functions of the Cerebrum and Cerebellum.—The conclusion from these experiments can scarcely be avoided, that the cerebrum is concerned with both sensation and volition—with the first exclusively, and with the second to a great degree; and that the cerebellum is likewise concerned with volition—that it has the governing and direction of the motion, if not the issuing of the mandate. Dr. Bostock has well expressed this, when he says, that "the experiments" (of M. Fleurens principally) "will prove no more than that the cerebellum is the centre of the sympathetic, or associated actions of the nerves that are concerned in voluntary motion."

Different Opinions respecting the Functions of the Cerebellum.—I have often had occasion to regret, that with so many subjects, and so many animals to treat of in one course of lectures, I am compelled, with seeming carelessness and want of candour, to pass over in silence the opinions of some of the best physiologists and pathologists on several points of theory and practice; otherwise it would have been interesting to have inquired into the opinion of Willis, who imagined that "the cerebrum was the organ of the perceptions from the external senses and also of voluntary motion, and the cerebellum of the involuntary and vital functions; or that of Dr. Wilson Philip, who denies that it has any relation to voluntary or involuntary motion, but does not assign to it any function. Majendie agrees with Fleurens, that it is the regulator or balance of animal motion; while Gall and others

strangely maintain, that the development of the cerebellum bears a relation to the generative faculty.

The Decussation of the Brain.—In describing the cerebrum, I spoke of the medullary matter of the brain as all tending towards one common centre; and likewise of certain commissures or bands, or prolongations of medullary matter, extending from one hemisphere to another, and connecting them together. This may serve to account for the fact often observed, both in the human being and the brute, that if a serious injury is inflicted on one side of the cerebrum or cerebellum, the effect is referrible to the opposite side of the body. Such an effect may also be partly accounted for mechanically.

When a violent blow is received on the cranium, the extravasation of blood, or the injury done to the brain, and sometimes the absolute fracture of the bone, is on the other side. The pulpy substance of the brain offers to the blow, or to the part of the cranium that receives the blow, a yielding resistance that will neutralize a very considerable force; but in proportion to the impetus which is not thus neutralized, the brain is driven against the unyielding bone on the other side, and is injured. Leaving this, however, out of the question, I believe it to be a fact, that an injury of the cerebrum or cerebellum, or even of the tubercles, is often followed by a loss of function on the opposite side of the body. It is not so with the medulla oblongata or the spinal chord.

The Pons Varolii.—Now, then, we can once more approach the pons varolii. It is the prolongation of the crura cerebelli stretching over the crura cerebri; and I beg you to observe, considering the view which I have just taken of the function of the cerebellum, that is at the base of the brain, and corresponds with the inferior surface of the medulla oblongata and spinal chord. I have already hinted, that the pons varolii is in a directed ratio with the corpus callosum, or superior medullary commissure, and in an inverse ratio with the corpora quadrigemina and the spinal chord. This is the great commissure of the cerebellum, and therefore would probably be proportionate to the other commissures. I have spoken of the corpus callosum in man being large, in order to connect together the medullary matter of the fully developed hemispheres. Compare the bulk of the pons, lessened proportionately in the dog, yet more in the horse, and still more diminished in the ox. I spoke of the absence of a corpus callosum as the roof of the lateral ventricles in the hare and rabbit, as a type of the rodentia. Observe the little pons varolii in these animals.

The mingling of Medullary Matter under the Pons Varolii.—

What takes place when the crura cerebri pass under the crura cerebelli, according to the simile of Varolius, like a river under a bridge? Anatomists have talked of the transverse fibres of the cerebellum, and the longitudinal ones of the cerebrum, and of the latter being traced low down through the loci nigri, even to the corpora striata; but, whether because the pons varolii is smaller in our patients, or I have not used sufficient diligence, I confess that I have found only faint and uncertain traces of these things; but I have found, and this vertical section of the pons will sufficiently exhibit it, the base of the arch of the bridge composed almost entirely of the medullary matter of the cerebellum; that as it ascends the side of the arch, it is gradually *mingled with and lost in* the darker-coloured matter of the crura cerebri, until, when I arrive at the crown of the arch, there is only a thin pellicle of medullary matter remaining. Then, at the crown of the arch, I have observed two medullary longitudinal bands or tracks of white substance, evidently the continuation of the corpora pyramidalia of the medulla oblongata, and of the central columns of the inferior surface of the spinal chord. I have cut transversely and vertically across the crura cerebri, a little posteriorly to the origins of the third pair of nerves, and the band or track was still visible. I have made a similar section a little more anteriorly, and beyond the origins of these nerves, and all trace of it had vanished. I have returned to the pons varolii, and I have observed a central medullary band occupying the sulcus on the crown of the arch—an evident commissure—an evident union of the medullary matter of the two pedicles of the cerebellum; and, looking attentively below this, I have traced a line of separation between the two sides of the bridge, or rather between the crura cerebri which run under the bridge, and I have begun to perceive the central columns of the superior surface. I can fairly make out the rudiments of four of the columns of which I shall presently find the spinal chord to be composed, and some notions of the structure and functions of this part of the brain begin to present themselves, to which however I must not yield too hasty belief. I attach importance, however, to the gradual mingling of the matter of the cerebellum with that of the cerebrum, and this mingling of substance taking place in the direction of the inferior surface of the brain, and also the prolongation of the medullary. I must not yet call it the motor track along the centre of the same surface.

The Medulla Oblongata.—This portion of the brain, of a mingled oblong and quadrilateral figure, I know to be most important, for it will not bear the slightest injury; pressure upon it causes immediate stupor, and if it is cut asunder, consciousness is in a

moment at an end. It contains likewise(and we here first of all meet with it) the mingled substance, and probably the mingled influence, of the cerebrum and the cerebellum; and we shall presently see that it first brings to view the origin and source of a new description of nervous influence—the organic. There are few parts of the brain in which there is apparently so essential a difference between the biped and the quadruped as the medulla oblongata. The small, yet prominent bold surface of the first, forms an evident contrast with the wider, flatter, tamer appearance of the latter. We observe in both the medium line or fissure prolonged from the spinal chord, and continued over the pons varolii. It contains the basilar artery.

The Corpora Pyramidalia.—On each side there are two longitudinal eminences—*corpora pyramidalia,* bold and protuberant in the human being, and also in carnivorous animals, as you will observe in this brain of the dog—broader and flatter in the ruminantia and the solipeda. These two eminences are the continuation of the medullary longitudinal bands or tracks of which I have spoken, and the commencement of the central columns of the inferior surface of the chord. The fissure between them is deep; in fact, it penetrates through the medulla: it divides it into two parts, which are held together more by exceedingly fine cellular, than by medullary substance.

The Nerves proceeding from the Pyramidalia. — Running transversely across the medulla oblongata, and close to the posterior edge of the pons, and between it and a transverse medullary ridge, that has not yet been noticed by our anatomists, although sufficiently evident, is another sulcus of little depth. The medullary ridge running parallel with the pons, is one of the origins of the portio dura of the seventh pair of nerves, and which springing from the motor column of the spinal chord as well as the lateral column, is, as we shall presently see, a nerve of common motion, as well as an organic one. Springing from this sulcus we also find the sixth pair of nerves, or the abductor; and more posteriorly, and apparently from the sulcus between the central and lateral columns, but actually from the central column, arise the linguales.

The Corpora Olivaria in the Human Being.—These eminences are very distinct in the human brain. They are found in the sulcus between the corpora pyramidalia and the lateral column. They are rounded and prominent anteriorly, and gradually sink to the level of the medulla oblongata posteriorly. It is difficult to reconcile the accounts which anatomists give of their structure. Some say that they derive their name from a mixture of yellow cineritious matter which they contain. Others describe an oval

white substance surrounded by layers, or folds of greyish matter. All agree that they are very singular bodies; that they here come first into sight, unconnected with, and not to be traced into any thing above, although they may be traced below into the lateral columns, or rather subside, and are lost in them. Behind the corpus olivare is a convex strip or column of medullary matter, which forms the lateral column, and that can be traced the whole of the way down the spine, between the inferior and posterior roots of the spinal nerves, and from which also, in the medulla oblongata, are given out certain nerves devoted to organic life—the spinal portion of the organic nerves.

The Corpora Olivaria in Quadrupeds.—In the ruminantia and the solipeda there is only a faint trace of the corpus olivare to be seen. There is no sulcus dividing it from the lateral column. There is a very slight rounding of the lateral column—in fact, the corpus olivare and the corpus restiforme together, and not to be separated from each other, form the head of the lateral column; and when we cut into the supposed situation of the olivare, we find none of the striæ or arborescent ramifications of grey matter which occur in the human subject. We have simply the two columns, the lateral being abundantly larger than the central. From this portion of the medulla oblongata, there springs another root of the portio dura, and also the glosso-pharyngeus, and the pneumo-gastric—all spinal organic nerves. I shall have much to say of them in another lecture.

The Spinal Chord.—The medulla oblongata now rapidly narrows and terminates gradually in the spinal chord. Some have spoken of a particular change of structure indicating where the one ends and the other begins. I have never been able to satisfy myself with regard to this; I should say that the medulla oblongata is the beginning of the spinal marrow, and that when it passes the foramen magnum, its changes its name. For the consideration of the spinal chord, however, we are not yet prepared; we must a little retrace our steps, and inquire into the structure and functions of the cerebral nerves.

The Cerebral Nerves.

The cerebral or animal nerves are soft white chords proceeding from the medullary portion of the brain to various parts of the head and body, and by means of which impressions from external objects are conveyed to the brain, and sensations are produced there, or the volitions of the mind are conveyed to certain organs, and voluntary motion is effected. I will not enter into the question, whether they are extensions of the substance of the brain, or mere organs of communication between the brain and

the various parts of the frame. There are difficulties on both sides. The nerves of pure sensation seem to rise from, or to be prolongations of, the substance of the brain—the nerves of common sensation appear to spring bodily from the matter of the brain—the nerves of motion would seem more to be spread upon the surface of the brain, and to be easily torn off. Whatever be the fact, I must, to render myself intelligible, adopt the popular language, and consider the nerves as emanations from the brain.

The Nerves are Symmetrical.—We cannot regard the base of the brain for a moment, without observing how regularly they arise by pairs from each side of the mesian line, which, commencing in the brain, pervades the whole frame. There are two complete systems of nerves. It is a kind and wise provision in order that the senses necessary to the comfort, if not the existence of the animal, should not be destroyed by slight and partial injury.

Comparative Size.—These nerves are, without exception, more developed in the quadruped than in the human being. Compare the nerve of smelling, of sight, or of hearing, in the two. This acuteness of sense was necessary partly for the existence of the animal, but more to qualify him to be our useful servant. We have that, the most valuable of all the senses, which he seems comparatively to want, that of touch, and, what is yet more important, we have increased power of intellect.

The Neurilema.—Every nerve, as it proceeds from the brain or spinal chord, is covered by a theca or sheath. It is difficult to describe the nature of this neurilema. It most resembles, or, proceeding from the spinal chord, is continuous with, the spinal pia mater. It is denser than the parietes of the vein, or even the artery. In the operation of neurotomy there is sometimes no little difficulty in dividing the theca. The sheath is necessary to give support to the pulpy matter of the nerve, and that it may lie in contact with and be compressed by the neighbouring parts without giving pain. When the nerve has reached its point of destination, or is divided into its minutest ramifications, the theca gradually becomes so thin, that the medullary substance is sensible of the presence and agency of these objects to which it was destined to respond—until then it is securely defended.

Substance of the Nerves.—The substance of the nerves resembles much, or seems to be identical with, that of the brain. If, in our anatomical preparations, there seems to be a difference; if we easily preserve the nerves while the medullary matter rapidly putrefies, we should perhaps reoollect, that it is the theca and not the substance of the nerve which is thus incorruptible. The nerves being deprived of their theca, or the soft nerves being

taken as the subjects of experiments, the same chemical agents act in precisely the same way on the pulpy matter of the brain and the nerves; yet, as the different parts of the brain seem to differ much in structure, the nerves present as striking differences. The proportion and density of the neurilema constitute, perhaps, the chief difference. There is not only the external theca, but every nerve, even the most pulpy, consists of numerous filaments, or distinct portions of nervous matter, each surrounded by its peculiar sheath. A thousand—ten thousand of these little threads may be bound together to constitute not only a compound, but a simple nerve. The manner in which they are thus bound may constitute a very great difference in the appearance and function of the nerve. In the olfactory nerve the threads may be large, and the thecæ of gossamer structure. In the optic nerve the filaments have a tubular shape, with a little canal or hollow in the centre. In the pneumogastric nerve there appears to be a single chord only; but it is divided by numerous furrows. In some branches of the ganglial, the filament is surrounded by a net-work or plexus of smaller ones. In the fifth pair many of the filaments are not only large, but the theca is unusually dense, and conjoined with these are numerous smaller filaments.

Bloodvessels of the Nerves.—Every nerve is attended by its corresponding artery, usually derived from the nearest arterial trunk. It is mostly seen on the theca, forming upon it the most complicated plexus of vessels. The capillaries penetrating into the medullary substance, usually carry only a colourless fluid; but they are capable of enlargement, depending on the frequently important pathological distinction, whether it is the neurilema or the nervous pulp that is labouring under inflammatory action. The veins are as readily traced; but, as in the brain, they do not usually follow the course of the arteries, nor even penetrate through the neurilema at the same point. Absorbents must necessarily accompany the nerves in their course; but no dissection or injection, however minute, has yet demonstrated them.

I must not say more until we actually examine the structure, and trace the course, and determine the function of the cerebral nerves; but these somewhat unconnected, and possibly not very interesting, observations, were necessary to prepare us for that examination which will be attempted in the next lecture.

ON THE PHYSIOLOGY OF THE STOMACHS OF RUMINANTS,

AND THE EFFECTS OF PURGATIVES ON CATTLE.

By Mr. J. D. Harrison, *V.S., Lancaster.*

From facts, which attentive observation and practice have enabled me to collect, I am led to conclude, that although the digestive organs of ruminants present to the eye a very complicated appearance, yet the functions which they perform do not in any great degree participate in this complexity of character, but that their operations are of a more simple nature. Those of the paunch and manifolds I am persuaded are so. The former, by its muscular structure, immense size, &c., lined throughout its whole internal surface with a strong cuticle, which I am inclined to believe does not in itself possess the power of secretion, is evidently intended for the reception of a large quantity of food, and the regurgitation of all, or the greater part of its contents, constituting the "cud;" and the latter, by its internal labyrinth-like form, secretion being performed in it by a number of follicular glands distributed throughout the whole of its cuticular surface, is intended for the retention of the food within its cells a sufficient length of time until it is brought into a more pulpy state, and fitter to be acted upon by the abomasum. To these Nature has added the manifolds, constructed in a curious and wonderful manner; and has afforded, by the complicated conformation of this organ, an admirable provision for the prevention of unnecessary waste of food and time, and the more perfect accomplishment of her object. Had she not given to it that strange peculiarity of structure which distinguishes it from the other stomachs, but left it a simple hollow muscle, the food would have passed on in an uninterrupted manner towards the abomasum and intestines, and the process of digestion would have been greatly accelerated; but this acceleration of so important a function would have been gained at an immense sacrifice of food; for the ruminants would necessarily have had to take in a larger quantity of food in a given time, in order to produce an equal proportion of nutritive matter. The digestive organs of cattle, and of milch cows in particular, have a great deal to do, in order, while living, and when dead, to yield food for man: and this they must do at the consumption of as small as possible a portion of the products of the earth. An all-wise Creator could alone have designed and executed a digestive apparatus apparently so complex, and yet so simple and so effectual, as the three first stomachs of cattle, and

particularly—if I might select either of them as most perfect in its kind—the manifolds.

In proof of what I have stated, I will relate two singular instances which came under my own immediate cognizance. Two cows were observed, during the whole of their lives, to eat a more than ordinary quantity of food; so much so, as at some times to even double and almost treble that which was consumed by ordinary cattle. They did not, however, repay this great consumption by a better appearance or more plentiful supply of milk; on the contrary, their milk was rather smaller in quantity, and of an inferior quality, compared with ordinary cows; and the fattening of them was attended with great cost and trouble, and took much longer than the usual time.

These lusus naturæ, as I considered them, I for a long time narrowly watched, unable to give any satisfactory reason for their great voracity; and frequently thinking that if bulimia was ever known to exist in the brute creation, it was here presented to my view, for food of every description, except animal, was devoured by them with wonderful rapidity. The cause of this remained unknown and unsuspected until they were slaughtered, when, to me, a most important point in the physiology of digestion in ruminants stood clearly developed; for upon examining into the structure of their manifolds, the internal surface of one of them merely displayed rugæ not quite so long as my finger; and in the other the corrugations were even less strongly marked.

This fact, then, plainly demonstrated that the food in these two cases, owing to the mal-formation of the manifolds, was not retained that length of time which was necessary for the breaking or macerating of it into a pulp for the more complete action of the abomasum and intestines; and that in its passage through the latter, as much chyle could not be separated from an equal quantity of food as would have been done had not Nature played this freak; and that from this cause they were obliged to take in a larger quantity, or, in other words, to eat more frequently than ordinary cattle, in order to produce the required quantity of nutriment for their due support, and the healthy performance of the various secretions. I have thought it necessary thus to give a brief outline of my imperfect opinions of the physiology of the paunch and manifolds, previous to replying to Mr. Friend, and for the better illustration of those replies; and although he has, in so fearless a manner, advocated the necessity for the exhibition of strong purgatives in similar cases to those related by me in THE VETERINARIAN for August last, and however feasible his arguments in support of his favourite theory may appear to himself and others, still has he failed in convincing me of their

efficacy, and I remain still so sceptical, *as even to doubt the propriety of their administration.* Mr. F. will see by this that our opinions yet remain opposed to each other; but I could wish him to understand that they are not so through any false ideas of notoriety, but principle; and with the heart-felt wish of seeing a much neglected part of our profession rescued from the hands of illiterate and ignorant pretenders, and established upon its only sure basis, a true physiology. I shall not, therefore, be deterred or deluded from the path I have chosen by high sounding plausible words, or the more severe but still harmless ones of sarcasm; for, pinning my faith upon no man's sleeve, but taking plain and open facts for my guidance, I trust I shall, by their means, be enabled to keep within the pale of probability and of truth.

It is a common and well-known law in mechanics, that the more complicated a machine is in its formation, so much the more easily are its operations deranged or suspended; but that, in the generality of cases, it only requires a trifling effort of the scientific mechanic to restore the deranged apparatus to its (if I may be allowed the term) healthy functions: so in cattle, it is to complexity of formation, and not of function, that we are to trace the many apparent difficulties in remedying their disordered stomachs; for they must be deranged if not disordered, before rumination can be suspended: and which occurrence having naturally ensued, our efforts ought to be directed to the recalling of these parts to their natural action.

With respect to the three first named cases, Mr. F. very justly observes, that Nature was exerting her utmost efforts upon the alimentary canal, in order to relieve the oppressed stomachs; and he attributes my failure in those cases, not to the remedies employed by me, but to their inefficiency in purgative property. It is inexplicable to me why he so strenuously urges the necessity of strong purgatives when he himself acknowledges that Nature was doing her best, by having increased the action of the intestines to such a degree; and, with the perfect knowledge that the stomachs, and not the intestines, are the actual seat of the disorder, why will he administer strong purgatives at all? Is he not spurring his hobby too hard, and thereby unwittingly blinding his reason against the absurdity, nay, cruelty, of administering strong purgatives when he very well knows that their stimulus is spent, not upon the paunch and manifolds, where it is wanted, but upon the intestines, which are simply deranged in their functions from sympathy, and are consequently more sinned against than sinning?

Mr. F. also appears to have forgotten the injury he would do

to the animal in perseveringly administering strong purgatives, is in direct opposition to one common law in the animal economy, viz. that "action cannot be greatly increased in any one organ without being diminished in some other." Can it, then, be considered absolutely necessary still further to increase the irritation they are labouring under? I think not, for although the intestines were not primarily the seat of disease, yet all, even the most ignorant, are well aware that diarrhœa cannot exist for several days, let the exciting cause be what it may, without the villous coat of the intestines partaking, in a greater or less degree, of disease. Although Mr. F. appears to think that super-purgation may be excited in the generality of cases without any dangerous consequences, yet I feel inclined to believe that all judicious veterinarians will concur with me in opinion, and in all cases avoid the slightest approach to it, particularly when the immense loss of cattle which this conntry annually sustains from diarrhœa alone is taken into consideration.

It being a fact generally admitted, that purgatives do not exercise their effects upon the stomachs, their administration in such and similar cases are, by me, strongly objected to: and their use, now so strongly recommended by Mr. F., is rather in opposition to an opinion of his given in THE VETERINARIAN for April, page 201, where he says that it is to him "problematical whether medicine can at all affect the first, second, and third stomachs." Now with this as his opinion, I think he need not be surprised (when he has pursued the purgative treatment to the extent he so strongly recommends) at his finding, upon post-mortem examination, that the citadel had remained impregnable, and the outworks alone were forced, which in all probability had not, from the very commencement, required any great force to subdue.

With these plain and open facts before his eyes, does it not enter into his philosophy, that his exertions would be more laudable were he to direct the force of his artillery against the offending parts, viz. the paunch and manifolds? and, that he can do so, *in a direct manner too*, I think I am fully prepared to shew him. When rumination is suspended, it is always my object to effect its restoration as quickly as possible; and when effected, I generally find every untoward symptom gradually disappear. I have frequently witnessed it during the last month, which was pregnant with what is here termed "fog fever," a disease entirely confined at the onset to the first, second, and third stomachs. In several cases I found it absolutely necessary to abstract blood, from the distention of the stomachs interfering with the action of the lungs, and thereby causing an acceleration

of the pulse; still, under all these circumstances, the restoration of the ruminating process by stimulants was attended in all with perfect success. I must not omit to state, that I had the animals drenched several times in the day with gruel.

Now that stimulants, or call them what you please, act in a direct manner upon the paunch, &c., is clearly seen in cases where rumination has been suspended for several days, and been restored by the simple introduction of earth fresh dug out of the ground; likewise, by the administration (when cattle are blown) of a solution of carbonate of ammonia in water, or, what is still better, the liq. ammon., or the more popular, though equally successful one, of common tar. And that a stimulant is occasionally required when they are in a state of nature is exemplified from the fact, of their frequent eating of fresh turned-up earth, or mole heaps.

INFLAMMATION OF THE MEMBRANES OF THE SPINAL CHORD.

By Mr. J. Chapman, *of Nottingham.*

A message was sent October 9th, 1833, requesting Mr. Youatt to attend on a horse belonging to Mr. H————. He had been noticed two days before to lag a little when at work, and was somewhat off his food. Mashes were given to him, and a day's rest, and he seemed to be better; still there was so much of the appearance of illness about him, that they would not put him to work without consulting us. Mr. Y. being confined to his room by severe indisposition, I attended. The pulse was 68, but not hard. The Schneiderian membrane was pale, but with patches of inflammation within the inner angle of the nostril; the extremities were warm. He shrunk, and appeared to suffer considerable pain when his sides were pressed on, and particularly the near one; and as I watched him attentively, I could perceive slight spams of the muscles of the shoulder and the chest. I imagined it to be a case of pleurisy, and yet the symptoms were not quite satisfactory. I bled the horse until the pulse begun to faulter, which was when about ten pounds had been abstracted; I then gave him a ball composed of digitalis, nitre, and emetic tartar, and ordered a small mash.

8 p.m.—The pulse has about the same rapidity, but it is softer and fuller. The horse feeds a little. Ball as before; mash diet.

10*th.*, 8 a.m.—Evident improvement. The pulse has sunk to

44. Pressure on the sides is not so painful; looks lively, and would eat more if it were given to him. Fever ball, with two drachms of the physic mass.

7 P.M.—The case is altogether altered. The pulse has risen to 70, and is very hard. The respiration is laborious, and the horse is evidently suffering great pain. The near fore-leg is curiously flexed, and the horse stands with its toe just touching the ground. The foot, and the whole of the limb, are perfectly cool, but the horse flinches when he is pressed on the shoulder of that side, or on the back. I immediately bled him again until he began to sigh, which was when eight pounds had flowed. The horse was sadly fidgetty, or rather violent, and I had considerable difficulty in pinning the vein. I ordered the shoulder to be well fomented with hot water, and particularly about the subscapular portion of the triceps, where the pain seemed to be most intense, and the muscle was hard and cordy. I then repeated the fever ball, with three drachms of physic mass, containing about ʒii of Barbadoes aloes.

11*th*, 8 A.M.—The horse was down, fighting in the most violent way, and beating himself sadly about. It was not, however, the action of cholic, but consisted of determined and constantly repeated efforts to get up, which he could not accomplish, because power over the near fore-leg was almost gone. The case being of this mysterious and dangerous character, a veterinary friend of Mr. Youatt's was requested to see the patient; he likewise did not attribute the violent plunging to abdominal irritation, but to irritation of a more general nature, and occasioned, he thought, by over-bleeding; and he recommended powdered opium, and spirit of nitrous ether, which were accordingly administered. On my return home my worthy instructor fully acquitted me of all bad practice in the second bleeding, and said that, in the course of a short time, the disease would more fully develope its real character; and that he already suspected what it would prove to be, namely, inflammation of the meninges of the spinal chord, about the lower cervical and anterior dorsal vertebræ. The fomentation with hot water was continued more diligently, and succeeded by an embrocation, consisting of terebinthinated tincture of cantharides and sp. of ammonia and camphor; and a large rowel was inserted in the chest. Previous to this we got the horse on his legs with a great deal of trouble, and there he stood seemingly pawing gently with his left fore leg, but, in reality, shifting his posture, and seeing whether he could throw a little of his weight upon it.

2 P.M.—A stable man came in great haste to tell me that the horse had rubbed out the pin, and was bleeding fast. He did

not appear to have lost much blood, and I soon effectually closed the orifice. I offered him some water which had been standing a considerable time in the stable, and he eagerly drank it. He was then quiet for a little time, when his violent and incessant attempts to rise recommenced. We assisted him, and at length got him up again. His bowels were slightly acted upon. He ate a little hay and mash, and what he did eat he ate greedily. He did not seem to suffer so much pain as when he was down, and he was much better satisfied.

8 P.M.—Still standing, but becoming more uneasy, looking round at his shoulder, or the anterior part of his chest. Pulse 80, respiration short and laborious, and accompanied with sighs and catchings, and the extremities were getting cold. The rowel acts; dressed it well; ordered hand-rubbing and bandages. Gave fever ball, and directed that gruel should be suspended over the manger. Gave strict injunctions, which I had done two days before, that he should not be left for an instant.

12*th*, 8 A.M.—I found him down, and making the violent and incessant attempts to rise which he had done on the preceding day. We got him up with difficulty, when, although evidently in great pain, he was pleased with the change, and he ate and drank heartily. The pulse was 80, as on yesterday, and the symptoms scarcely changed, except that he sooner began to be fidgetty with his affected leg, but which he could now just move, and no more. As I was standing by his side, talking with the owner, I was startled, for all at once his breathing became more laborious—it was performed by snatches—there were spasms of the muscles of the side and of the cheek—the flexors of both fore legs became contracted—and he fell as if he were dead. Presently all the laboured breathing and the other symptoms returned. I started to see whether I could find Mr. Youatt's veterinary friend, to obtain his advice once more.

4 P.M.—I was unable to meet with him until nearly this hour. He said at once that it was a hopeless case; and that it was one of those obscure cerebral cases to which horses are so subject, and in which so little can be done. If, however, it was wished that any thing more should be done, he advised that a physic ball should be given, and followed up by doses of laudanum and spirit of nitrous ether. A physic ball was given, but the horse began again to beat himself about, using his head and his neck if he could not his fore legs; and continued to do so until his strength was completely exhausted, when he died early in the morning of the 14th.

Post-mortem examination.—The investing membranes of the contents of the abdomen shewed very few marks of disease, nor

did the intestines themselves: the liver, however, and particularly the left lobe, was much inflamed. The lungs were highly congested, particularly the left lobe. The heart was somewhat enlarged, and the parietes of the right ventricle were very thin. This ventricle might be said to be in a state of dilatation. The pericardium contained about a pint and a quarter of serous fluid.

The spinal canal was opened through its whole extent. Inflammation appeared to commence about the fifth cervical vertebra, and continued more or less to the third lumbar one. The greatest intensity of inflammation was between the fifth and seventh dorsal vertebræ. The fluid contained in the central canal of the chord was there quite black. The dura mater was much injected and thickened. The ligamentum denticulatum presented marks of intense inflammatory action, and every vein belonging to the membranes was turgid with blood. The superior and lateral columns of the spinal chord presented no lesion, but the inferior columns had a pulpy appearance. To me this case, mysterious as it was during its progress, is now as clear as the day; and I only wish I had the pen or the experience of some whom I know, to do justice to such a subject.

ANCIENT HORSEBREAKING AND HORSEMANSHIP.

Skill in this art was deemed of too great importance to be lightly passed over. The *equorum domitor* became a title of honour among the ancients, because it signified a soldier, or chief, who fought on horseback, and skill in riding or driving was a requisite qualification of such warriors. But there were also professional riding-masters, alluded to by Xenophon, "*equisores.*"

The manner of breaking horses was various in different countries, but that of the Greeks and Romans was in essentials this. Xenophon directs the colt to be rubbed and stroked in those parts of the body where he was most likely to receive the most pleasure, and these were deemed the parts most covered with hair. The groom was ordered, likewise, to lead him through crowds, and familiarize him to sights and noises of all kinds.

The Greeks had a bridle armed with teeth, which came over the nose, like our cavesons, and was very severe in its effects; there was also a very rough bit, called the lupatum. These methods were applied, so far as was necessary, before the smooth bit.

In the processes of teaching, the horses were moved in circles, that they might be made supple, and ready to turn any way.

The Parthians, in training their horses to go safely over rough ground, and lift their feet above opposing objects, disposed, on a spot about fifty paces long and five broad, in rows, boxes or coffers filled with chalk or clay. At first the horses used to trip and stumble, but, being taught by repetition to lift their feet higher and avoid the offending objects, they acquired a habit of bending their knees, and attending to their steps, sometimes shorter and sometimes longer, as the ground required, and thus were enabled to carry their rider in safety. But the Romans, if nature had not furnished the horses with a proud and lofty action, used to tie rollers of wood and weights to their pastern joints, to compel them to lift their feet; a practice particularly required to go safely, skilfully, and with ease to the rider in the amble. This was a favourite pace with the Romans, and it consisted, through tying the legs, in controlling the steps of the horse, so that he moved two legs on one side together, and the other two in the same manner. According to this account, the amble must have resembled a gentle canter. Trotting they abhorred, and horses fond of that pace they called even tormentors *(cruciatores)*, and torturers *(tortores)*.

To produce time and cadence in the steps of the horses, they were exercised by musical accompaniments; and books of horse-music are said to be still existent in Italy. Races were rode down hill in some nations; and when the horse leaped over a ditch, the rider laid hold of the mane, that the bridle might not check him; and when going down a steep or declivity, he flung his body back, and supported the horse with the bridle, to prevent his falling headlong down the hill.

They were taught also to kneel, that their riders, who had no stirrups, might mount them by jumping, a practice taught by means of wooden horses. They mounted on the off side, by holding the mane and the bridle in the hand. Plutarch mentions colts that would practise figure-dances, and theatrical horses; and Homer speaks of αμφιπποι, *desultores*, or persons that would leap from one horse to another.

What seems singular is, that impetuous and fiery steeds were deemed unfit for war. The Greeks tried their horses by a bell, and other loud and sudden noises; and by their behaviour under these circumstances judged of their temper and character. Such horses as were worn out, and unfit to serve with the troops, were turned out; and, as a mark of dismission, were branded on the jaw with the figure of a circle or a wheel. It was also usual with private people to mark their horses by branding into their flesh

certain figures and marks as letters of the alphabet, *sigma* and *kappa* being the most common (whence horses so marked were called Καππατιαι, and Σαυφοραι, from σαν, the ancient name for σιγμα) initials of the owners names, or those which denoted the breed and country, figures of animals, and other devices Thus Lucian mentions the practice of stamping horses with the figure of a centaur; and Bucephalus is said to have been marked with the figure of a bull.

Lardner's Cabinet Cyclopædia, No. 47; Arts and Manufactures of the Greeks and Romans.

ON THE SYSTEM OF INSTRUCTION AT THE VETERINARY COLLEGE.

By Studens.

Gentlemen,

Although you did not insert the letter of a Student, addressed to you in the spring of 1831, on some of the subjects on which I am now about to write, you took such notice of it, that, as I am told, the desired effect was for a time, too short a time, produced. Well, gentlemen, things were at the close of the last session got as bad as ever. I think that you are somewhat quiet about this said College of ours of late; some of us think too quiet. Others of us imagine that we can appreciate your motives—that some of you being teachers yourselves, there is a principle of courtesy and honour which prevents you from bearing too hard on your brethren;—and others say, that you are satisfied with the progress of reform everywhere else, and are assured that *veterinary reform* will not "lag far behind."

Whatever be your motive, your conduct in the management of your Journal compels us to believe that it is a good one; but if it be connected with that said courtesy and honour, permit me to tell you, that there is a false as well as true honour, and that the duties you owe to your profession a thousand times outweigh any supposed ones to your fellow-teachers. You should have strength of mind enough to see this, and to brave the sarcasm with which fools and knaves might endeavour to load you. You saw, at the last dinner, what interpretation some of those to whom I am alluding put on your conduct, and the advantage they took of it so far as they dared. Depend upon it, you will meet with much more opposition and annoyance, while you are pursuing the present "smooth and even tenour of your way," than when youassume the firm and determined, and, I say, noble attitude which you were accustomed to assume. There are some

who cannot or will not comprehend a good principle or motive, but *they are not insensible to fear.*

I am a young scribe, and, ergo, scribbling about every thing but that which should employ me. Now to business, if I can.

You can hardly imagine how rejoiced I was when Mr. Vines came into the dissecting-room at the beginning of our last session—paper in hand—and told us, that *Mr. Coleman was determined we should attend more to our anatomy;* and that he was ordered to give in daily to that gentleman a list of the names of those who attended the dissecting-room; and that Mr. Coleman would present the class with an injected specimen, and dissected also for the nerves as soon as it could be prepared. "Things are going to be as they should be," thought I; "there will be times such as our predecessors never saw. Bravo! old T**** for ever!"

I attended morning after morning, but I found no preparation. Well, I could wait for that. But there was no preparation *for demonstration*—the funds of the College, or the pockets of the demonstrators, could not afford even a five-shilling ass for the assistant demonstrator (pshaw!) to commence his boasted course. I lingered on until I was tired, disgusted; and all that I saw was, that Mr. Vines, when he was not too busy with his list, sometimes would, and sometimes would not, demonstrate parts of subjects at the request of some pupil, the subject being purchased at the expense of the pupil; but that he did nothing more.

This is not the case at other schools. The demonstrator or his assistant, so far as circumstances will permit, is always at the service of the student, who may be poring over subjects procured by himself; but, beside this, there are always subjects procured at the expense of the institution, or of the demonstrator or the teacher of anatomy, so that, *at an appointed hour, a regular and perfect course of demonstrations may be carried on.* Who ever saw, on the table of our dissecting-room, a subject which cost either the institution or its officers a penny?

Well, gentlemen, all these fine promises and the injected preparation vanished in smoke, and our demonstrations are just where they used to be,—*in nubibus.*

What has been the consequence of this?—why, that a private school of demonstration and grinding has been established under the very nose of the College, and that many of the students attend on it. Mr. Spooner is really a good anatomist, so far as the College instruction goes; and he has seen and heard so much of college examinations, that few men can better conduct the young student through the dangers of that passage. If, however, I, who am

but a poor pupil, might dare hint one word of advice, "and with no *un*friendly voice," it would be that there is as much to be done in the *study* as in *the dissecting-room;* and that it is a pity that a young man, *in Mr. Spooner's situation,* who has so soon and so deservedly carved himself a reputation with the point of his knife, should put that reputation at all to hazard by occasional thoughtlessness and error, whether it regards the substance or the clothing of what he says.

Since I am got into the way of giving advice, I will turn to Mr. Vines, and tell him that he would do much better in rubbing up the knowledge which I understand he once possessed, than in fretting and fuming and vapouring about with his list-paper. Mr. Vines, was once a good anatomist. If he will apply himself a little when his other duties are done, and prepare one or two subjects in a masterly manner (it should be at the College expense, or at Mr. Sewell's), and at the same time cultivate a simpler and less roundabout mode of explaining himself—if he will unite the science which he had, with the good-nature which he has almost lost—if he is attentive, obliging, and clear, and gives these *systematic courses* in addition to superintending the personal labours of the students, he will soon retrieve himself among the pupils, and his demonstration room will be filled; and for this especial reason, that no man will pay for that which he can get, and as good, for nothing. But while the College-room continues to be deserted, he may depend upon it that he has himself to thank for it, and for the implied disgrace which must attach to him and to the institution to which he belongs.

But now, gentlemen, once more to return, or to try to do so, to my subject. Is it right, or rather is it not shameful, that I should be compelled to go out of the College, and to pay more money for that which is, in common honesty, included in my initiatory fee? The existence and flourishing state of such a school as Mr. Spooner's is proof positive of what I am saying; for, I repeat it, money is not so plenty as to induce me to give three pounds for nothing; but, nevertheless, *I must give these three pounds,* for demonstrative anatomy is not taught as it ought to be —*is not taught at all systematically at the Veterinary College.* I hope you will not give a mere notice of my letter, but insert it all, with its devious yet harmless wanderings.

Then, gentlemen, I go to the College to learn to practise on the diseases of domesticated quadrupeds; but I hear there of one only, and the anatomy of that one I am not taught. No; I do not recollect the time when *a horse* was put on the dissecting table; and, worse than all, my chief instructor, Mr. Coleman, when he lectures on the muscles, has preparations of the ass and

not of the horse before him. But is not that the same thing? No; not to him who wishes to be master of his subject. *The anatomist* knows that there is more difference in the muscles of the horse and the ass (taking, for example, his anterior limbs; and with reference to the endurance of the latter, and the speed, extensive action, and endurance too of the former) than one veterinary surgeon in a hundred suspects.

What would you think if a lecturer were now to endeavour to palm off upon his class a great monkey for a human being? There may be more points of difference in these two subjects, but there are nearly as many points of resemblance. Many a year passed before it was discovered that the immortal Galen's dissections were all made from the monkey.

Horses occasionally die at the Veterinary College as well as at other public infirmaries. What becomes of them? Why, *old Cross*, with whom we cannot, try as we will, be long *cross*—the sheer bare-faced impudence of the fellow, and his countenance at those times never displaying one vestige of *crossness*, carries him through every thing—this *old Cross* has *contracted* for every carcass. He can scent a dying horse as keenly as any vulture—he is there before the animal has scarcely breathed his last—he claps his paw upon the beast—he proceeds in the post-mortem examination in his own way—he destroys every thing but what it is profitable for him to keep untouched, or he sells different parts at a Jew's price; and science, morbid anatomy! ye have only to weep over the butchering work.

Now, gentlemen, ought this to be so? We are told that the price thus obtained is taken from the owner's bill: but was this ever brought fairly before the committee of governors, or the general meeting of the subscribers? Would they deprive the pupil of the most valuable of all information—worth a thousand lectures—the traces which disease have left, and the symptoms which indicated the ravages of disease during life; would they deprive the student of this for the paltry chance of recovering 20*s*. if a horse of theirs should happen to die at the College? I am sure that this might be very easily altered, and I turn now to my Professors, Messrs. Coleman and Sewell, and entreat them to get it altered. We should then have opportunity of knowing something of the anatomy of the horse, instead of being too much—ay! even the best teachers and writers among us—mere *ass* anatomists. I have already seen enough to be able to tell some curious tales about this *ass* anatomy. Perhaps I may, if Mr. Vines does not work me too hard with his regular and perfect course of demonstration, give you a few of them.

There are several other things on which I could have wished

to address you, but I am afraid that I have rambled even beyond your patience. I meant to have referred to the continual difference of opinion between Mr. Coleman and Mr. Sewell; and even Mr. Vines, who, with a kind of nonchalance and presumption to me altogether unintelligible, will often start and stoutly maintain a third opinion, reconcileable with neither of the others. But the animus—the feeling—the manner—the plain and palpable object, used to be far more disgusting to us than the mere contrariety of opinion. I trust that we shall see nothing of this in the ensuing session. It cannot be for many years that restraint will need to be imposed. Let good feeling, common courtesy, honour, prompt those to whom I am alluding, how they ought to act. I do not know the subject which is more likely to produce an explosion among warm-hearted and straightforward young men than this. Should it be necessary, I shall claim a page or two of your invaluable Journal for this, and one or two other desiderata.

I am, &c.

12th Oct. 1833. STUDENS.

SURGERY AND VETERINARY SURGERY.

It will be curious to compare the state of surgery at the present time with that of the time of Henry VIII, at which period, as *Gale* tells us, there were very few worthy to be called surgeons. His account of those employed in the army is very humorous:—"I remember," says he, "when I was in the wars at Muttrie (Montreuil), in the time of that most famous prince, King Henry VIII, there was a great rabblement that took on them to be surgeons; some were cow-doctors, and some horse-doctors, and some tinkers and coblers. This noble sect did such great cures, that they got themselves a perpetual name; for, like as Thessalus's sect were called Thessalians, so was this noble rabblement for their notorious cures called dog-leaches; for in two dressings they did commonly make their cures whole and sound for ever; so that they neither felt heat nor cold, nor no manner of pain after.

"But when the Duke of Norfolk, who was then general, understood how the people did die, and that of small wounds, he sent for me, and certain other surgeons, commanding us to make search how these men came to their death; whether it were by the grievousness of the wounds, or by the lack of knowledge of the surgeons; and we according to our commandment made search through all the camp, and found many of the same good fellows, which took

upon them the names of surgeons; and not only the names, but the wages also.

"We asking of them whether they were surgeons or no, they said they were. We demanded with whom they were brought up; and they, with shameless faces, would answer, either with one cunning man or another, which was dead. Then we demanded of them what chirurgery stuff they had to cure men withal; and they would shew us a pot, or a box, which they had in a budget; wherein was such trumpery as they did use to grease horses' heels withal, and laid upon scabbed horses' backs, with rewel and such like. And others, that were cobblers and tinkers, they used shoe-maker's wax, with the rust of old pans, and made therewithal a noble salve, as they did term it.

"But in the end this worthy rabblement was committed to the Marshalsea, and threatened by the Duke's Grace to be hanged for their worthy deeds, except they would declare the truth, what they were, and of what occupations; and in the end they did confess, as I have declared to you before."—*Aikin's Memoirs of Medicine*, p. 99.

ON STRANGLES, AND ITS OCCASIONAL ANOMALOUS APPEARANCES AND CONSEQUENCES.

By Mr. J. M. Hales, *V.S., Oswestry.*

Strangles, in its regular form, is a disease requiring little attention; and is generally considered as an affection which at least nine young horses out of ten will have; yet it occasionally takes on an irregular character, becomes very troublesome to manage, and not unfrequently fatal.

I do not wish to enter into any discussion as to the contagious or infectious nature of strangles; but my experience convinces me that, when a bad sort of the complaint shews itself in a neighbourhood, the great majority of horses or colts attacked with strangles in that district, will have the disease in an irregular way.

In the early part of the present summer I was attending some young horses and colts in a gentleman's stud with strangles, and there was scarcely a case that had not some anomaly about it; such as secondary abscesses forming about the throat and parotid glands, in the flank, upon the shoulder, &c. Shortly after this the groom of Sir W. W. Wynn (who keeps his young stock in the immediate neighbourhood of the gentleman alluded to) told me that he had got the strangles shewing itself amongst his

young horses and colts. I remarked that he was likely to have a troublesome job of it, for I had attended several cases in his neighbourhood, and every one had been of an irregular kind: and pretty well has my prediction been verified; for out of at least twenty cases that have occurred in this stud, not more than four or five have run their course in the regular way.

In several, after the tumour between the jaws had suppurated and the disease was apparently going off, sudden enlargements took place in the parotid glands, and about the throat; in some cases rapidly suppurating, while others, being of an indolent character, required repeated applications of liquid blister and linseed poultices to bring the abscesses to maturity.

We also had cases in which abscesses formed in the flank and upon different parts of the body; and although these circumstances created a great deal of trouble, yet we only lost two; the one a pony previously broken-winded, in which the secondary disorder attacked the chest: the other case is perhaps worth detailing.

While I was in attendance on the above stud, I was, one day, asked by the groom (an intelligent and unassuming man) to look at a two-years old colt, which, he said, did not appear well, and yet there was no particular disease about him. He had shewn the external symptoms of strangles slightly, and was supposed to be recovering. He was languid, and lost flesh, and had been so for some time. He had an unhealthy, unthrifty appearance; he was dull in countenance and listless in his motions. There was no cough, no difficulty of breathing, no manifestation of pain; but he had a quick small pulse of 80. The respiratory murmur was distinct. Small doses of calomel, digitalis, and antimony, were ordered to be given every alternate day, with light mash diet, &c.

Little alteration was observed for about ten days, when he had an attack of what the stable people thought cholic. The groom was from home; but he was bled, and had a dose of cholic mixture, which is always kept in these stables to be ready when required.

I saw the colt on the next day; he exhibited symptoms of exhaustion: he walked weak and staggering, and the pulse was 100. He was ordered to have gruel, &c., to rally him a little to-day; and the calomel, &c. balls were to be resumed on the following day.

For a few days he seemed to improve; he became more lively; and the pulse lowered to 70: still there was something in his look that indicated lurking organic disease; and although I do not consider myself any great proficient in the practice of auscul-

tation, yet I was led to believe, from even the imperfect knowledge that I have of that important diagnostic assistant, that the chest was not the part principally diseased, but that the mischief was somewhere behind the diaphragm—perhaps connected with the liver, or mesentery, or both.

A blister was directed to be applied on one side, and when the effect of that was gone off a second was applied to the other side, so as to keep up a continual action upon the skin. The medicine was continued. At this time the scrotum began to swell, and, under the impression that matter would form there, I directed that fomentations should be applied, and slight stimulating liniment rubbed in.

This treatment was continued for nine days, and although the medicine seemed to control the action of the heart, the pulse being lowered to 50, still there appeared to be no improvement of the general health. The colt lost flesh, and his countenance betrayed that all was not right within. The medicine was changed for bark, digitalis, and camphor, and, as the blisters on each side were nearly well, a large rowel was inserted in the chest.

Under this plan the colt appeared to rally for about ten days, and the groom entertained hopes of his recovery. The improvement, however, was transient: although he continued to eat, and had, through the whole of his complaint, eaten a very tolerable allowance of food, yet he again rapidly sunk, and upon the 3d of August he died.

Post-mortem examination.—The peritoneal coat of the large intestines was slightly inflamed; a great portion of the omentum had entirely lost its character; it was strangely thickened, and adhered to the diaphragm and peritoneum; and a large tumour had formed in the middle of it, which, when opened, was found to contain from two to three quarts of pus. A quantity of serous fluid was effused into the abdomen, and, when we began to remove the intestines, pus flowed in large quantities into the abdomen. On tracing the source of this, we found that it came from large abscesses that had formed within thickenings or folds of the mesentery, or tumours attached to it; and I have no doubt but that at least a gallon of pus had flowed from and was contained in these abscesses. On examining the intestines, it was discovered that about six inches of the ileum were contracted, and its coats thickened; the contraction was so great, that I could scarcely get my finger into it. About nine inches of that part of the colon where it naturally becomes narrow was also much contracted, and would scarcely admit a finger. The dung that was contained in this part of the gut was in small dry

lumps, resembling what is usually voided by sheep. There was no secretion from this portion of the intestine. The dung was moist before it entered the stricture, and regained its moist state shortly after it reached the healthy part of the colon beyond the stricture. During the whole period of the disease the colt was considered to dung well, for the fæces voided were of a natural colour and consistence, and the quantity as great as could be expected, considering the food taken in.

The formation of abscesses in some internal part I have previously known in many instances to follow strangles. In these cases it generally happens that the secondary disease comes on in a very insidious manner, at a time when difficulty and danger appear to be removed. I recollect a very valuable colt that had strangles, and was supposed to be getting well fast. I found him one morning with a staring coat, an unhealthy look of countenance, and a quick pulse. Apprehensive that internal inflammation was coming on, I bled him, and gave him fever medicine. For three days he continued in nearly the same state. The bleeding was repeated on the second day, and the fever medicine continued; but on the fourth day, while they were giving him the ball, he fell, and died in a quarter of an hour. A large abscess was found in his chest, which had burst and suffocated him.

In another case, after the usual symptoms and course of strangles were apparently got through, the colt suddenly began to reel and stagger in its gait, and shortly lost all control over the muscles of voluntary motion, and could not stand. It ate a moderate allowance of food, and did not appear to be suffering much pain. After continuing in this state for a few days, the colt died, and an abscess was found in the centre of the cerebrum, containing a considerable quantity of pus.

There are other sequelæ of strangles very troublesome, and sometimes fatal, as the formation of chronic abscesses about the larynx and upper part of the trachea, from which sinuses run down to the windpipe or larynx themselves. These sinuses are often troublesome to heal, and occasionally leave the subjects of them roarers.

A very severe case of this kind occurred to me several years ago, in which numerous abscesses and swellings formed about the throat, and from which sinuses extended to the trachea. The swelling of the throat altogether was very considerable, and had existed for two or three months before I saw the colt. *He roared when walked about.*

The abscesses were opened, the sinuses injected with a light caustic application, and alterative medicine prescribed. Many of the sinuses and abscesses healed; but as one got well, an-

other formed; and this went on for nearly three months after he was under my care, until, at last, the continued irritation wore him out, and the colt died. I can give no correct account of the morbid appearances of this patient, as his owner lived nearly twenty miles from Oswestry; but I was informed that the windpipe and other parts about the throat were very much diseased and ulcerated.

THE KNACKERS' HORSE ABATTOIR, OR SLAUGHTER-HOUSE, MONTFAUCON, NEAR PARIS.

A TRANSLATION into German has been made of Mr. Babbage's late work, "The Economy of Machinery and Manufactures," to which the translator has added some valuable notes. One of them contains an extract from a paper read by Professor Burdach to the Physico-Economical Society of Königsberg, on what is called the Flaying Establishment at Montfauçon, near Paris. This is probably the most curious example in the world of the manner in which materials, which are commonly thrown away, and scarcely even pay the cost of removing them, may be turned to profit. There are, no doubt, many other substances as well as bones, flesh, and entrails of dead horses, which are daily allowed to run to waste in great quantities, and which, in like manner, under judicious and systematic management, and by the application of processes familiar to the present advanced state of the arts, might be saved and converted to important uses. The present account may serve as an illustration and indication of how this might be done.

The first person who instituted an establishment, on a considerable scale, for the profitable employment of what are commonly regarded as the waste parts of dead animals, was the son of the celebrated Cadel de Vaux. This was in the year 1816. Another chemist, named Fouques, also about the same time carried on a manufactory for the preparation of various soups and other sorts of food for beasts, from the flesh, bones, and entrails of animals that had died or been put to death as useless. But, at present, the principal establishments of this description are the two at Montfauçon, on the high ground to the north of Paris, where the business is confined to the flaying and profitable preservation of the parts of dead horses. One of these establishments belongs to a M. Dussaussais, and the other to a company. Some of the horses are dead when they are received,—others are brought to be killed on the spot. They then undergo the following processes:—

1st.—The hair of the mane and tail is cut off. As, however, the long hair used for weaving of cloth is commonly wanting, the produce is but small, and will barely exceed a quarter of a pound of horse-hair, a pound of which is sold for about five pence English. The produce of one horse, in this particular, is therefore about one penny.

2d.—The skin is now taken off, laid together, and sold, while fresh, to the tanners in the neighbourhood. It weighs in general about sixty pounds, and sells for from nine to twelve shillings English.

3d.—The blood is allowed to run to waste, and to flow on the ground, a circumstance which greatly increases the horrible filth at Montfauçon. If it were collected in gutters, it might be used either as food for cattle or as manure; and a cruor prepared from it for sugar-refiners, who pay for blood, so prepared, about two shillings and five pence the cwt.

4th.—The shoes are taken off and sold as horse-shoes, if still good enough, or, if not, as old iron. The nails, likewise, are collected and sold, more particularly in the provincial towns. The profit from this source is about two pence per horse.

5th.—The feet are cut off, dried, and then beaten on a hard surface, in order to detach the hoofs; or, in winter, they are left in heaps to putrefy, until the hoofs become loose. The hoofs are sold to turners, comb-makers, and manufacturers of sal-ammoniac and prussian-blue, who pay for them, if they are rasped, about one shilling and five pence.

6th.—The fat is very carefully collected. First, that upon and between the muscles is separated; then the muscles are laid single on the table, and every little bit of fat picked out; and, finally, that of the entrails is detached. The collected is fat cut into small pieces, and melted. Horse-fat is used for burning in a flame by enamellers and glass-toy makers; it is also used to grease harnesses, shoe-leather, &c. Soap is manufactured from it; and it produces gas for lighting. The pound is sold for five pence three farthings. A horse yields, on an average, eight pounds, worth about four shillings: well-fed horses will yield, however, as much almost as sixty pounds, bringing therefore nearly thirty shillings.

7th.—The flesh is used for food by the workmen, who choose the best pieces for themselves, and leave the rest to dogs, cats, hogs, and poultry. The feeding of the workmen, however, with the flesh of such as have been killed, is a part of the system of economy that could not be practised in this country. Many circumstances shew that a large number of the people of France resort to expedients for food which would be revolting to an

Englishman. The flesh is used likewise as manure, and in the manufacture of prussian blue. A horse has from three hundred to four hundred pounds of flesh, which yields in this way a profit of from thirty to nearly forty shillings.

8th.—The sinews or tendons being separated from the muscles, the smaller ones are sold fresh to the glue-makers, and the larger dried and disposed of in great quantities for the same purpose. A horse yields about one pound of dried tendons, worth two pence three farthings.

9th.—Of the bones nearly three hundred and fifty thousand pounds are annually sold: the remainder serves for fuel, and chiefly for melting the fat. A considerable quantity is sold to cutlers, fan-makers, and other workmen who use bones; but more to the manufacturers of sal-ammoniac and ivory-black. The pound of bones sells for about a farthing English; and as a single horse produces ninety pounds of bones, the profit is about one shilling and eleven pence. The bones would, however, yield much more if they were ground in mills, as is done in Auvergne and Strasburg; for the cwt. of bone-meal, an excellent manure, fetches nearly seven shillings and sixpence.

10th.—The small guts are wrought into coarse strings for lathes, &c. The other entrails are piled up, and sold in a state of putrefaction as manure. A two-horse load brings from four shillings and sixpence to nine shillings.

11th.—Even the maggots, which breed in great numbers in the putrid refuse, are not lost. Small pieces of flesh and entrails, to the height of about half a foot, and slightly covered with straw, are piled up in the sun. The flies, attracted immediately, deposit their eggs in these, and, in a few days' time, the whole becomes a living mass, the putrefying substance being reduced to a very small quantity. The maggots are sold by measure, partly as baits for fishing, but chiefly as food for fowls and pheasants. The entrails of a single horse generate these maggots in such plenty, as to yield a profit of nearly one shilling and sixpence. Many, besides, are metamorphosed into the musca carnaria, cæsar, and vivipara; so that there are, at Montfauçon, great swarms of these flies, which again attract vast multitudes of swallows, and make the neighbourhood of Montfauçon the favourite shooting-ground of the Parisian sportsmen.

12th.—The rats at Montfauçon play a part equally important. As these animals find here abundance of food, and the females bring forth every year from twelve to eighteen young, there is an innumerable host of them in the place. Sixteen thousand have been killed in four weeks in the same room, without any decrease being perceived. They undermine the walls, so that the build-

ings give way, and can be secured only by surrounding the foundations with broken glass. The whole neighbourhood has been excavated by them to such a degree, that the ground shakes beneath your feet. They are caught by placing the fresh carcass of a horse alone in an apartment, the walls of which have openings at the bottom. The next morning these holes are stopped, and all the rats killed; their skins are then sold at three shillings per hundred.

In this manner, we see that the various parts of a dead horse, converted into articles of trade and consumption, yield, according to a calculation which has been made when of middling quality, two pounds thirteen shillings, and, when very superior, nearly five pounds. A dead horse is bought, at first, for from nine shillings to thirteen shillings and sixpence,—to which add from four shillings and sixpence to six shillings as wages for the collector and labourers, still there remains a profit of about thirty-six shillings to the establishment. Now, according to the statement of M. Parent Duchâtelet, there are thirty-five horses, on an average, every day, or twelve thousand seven hundred and seventy-five every year, brought to Montfauçon from Paris and the surrounding neighbourhood:—this altogether affords a profit of about twenty-three thousand pounds sterling.

Penny Magazine.

ON SCHLOSS'S EDITION OF GURLT'S ANATOMY OF THE HORSE.

By Amicus.

I remember reading, with a great deal of pleasure, your review of Schloss's Edition of Gurlt's Anatomy of the Horse, in the first Number of the New Series of your invaluable Journal, and with which, I am ashamed to say, I then first became acquainted.

I agreed with you in the regret and indignation which you expressed at the perfect destruction of the work as "the Veterinarian's Compendium of Anatomy," and as indirectly, and designedly, upholding that infamous system—the total abandonment of every other patient, and exclusive attention to the horse; but I was eager to become possessed of the work, as giving me that, of which, to the disgrace of my profession and my country, I was before destitute, "an Anatomy of the Horse," illustrated by plates which I could understand; and not by any mere verbal description, which I very seldom could understand, at least fully.

There was one sentence which had particular influence on me

(p. 48), in which you speak of "a translation, and a very useful, and skilfully performed enlargement of Gurlt's too concise German and Latin explanation of the figures."

Having, like too many of my brethren, not had the advantage of a classical education (why, gentlemen, do you not take up this point. A great deal depends, certainly, on the situation into which we are thrown—but there are few situations in which this is not, in some way or other, a serious inconvenience to us, and in very many it is an irreparable misfortune), I immediately caught at this, and in less than a fortnight the first part of the work was mine. I acknowledge that I was pleased with it. The cuts, making allowance for a little roughness, are neatly done; and, so far as old recollections go, and I have been enabled to compare them with the actual subject, they are very correct.

I was puzzled in one or two instances about the muscles. I compared Gurlt with my dried preparations, and he was wrong and I was right. I was mentioning this to a brother practitioner with whom I associate on the friendly terms that should exist between us, and whom I esteem as one vet. ought to be able to esteem his fellow, and he drily advised me not to be too sure, for my dried preparation was that of the ass—Gurlt described the horse. We got a limb from William, the huntsman, just by, and lo and behold! Gurlt was right, and I was wrong. To what extent this may go, the pressure of a country practice will not permit me now to inquire.

But, of this said translation.—I was a little startled before I got through the skeleton. I was looking at the knee. "The bones of the carpus are very prettily given," thought I; and then I could not at the instant recall the names of them, and I turned to the explanatory letter-press, and there I read, as constituting the first row, os semilunare, os triquetrum, os naviculare, and, behind, os hamatum; and, in the second row, os multangulum majus, ditto minus, and os capitatum. "Whew!" thought I, again, "this is all Greek to me; and is this my friend's 'usefully and skilfully performed translation?' Let me see who is this translator? 'J. Willimot, member of the University of Berlin,' and who tells me in his preface, that 'to render the book more generally useful, he has added to the technical expressions, those veterinary terms most commonly made use of in English society.' Has he, indeed? Am I on my head or my heels?"

I turned at hap-hazard to some cut of the muscles. I opened at plate X, and I took fig. 1, and I had the fourth layer of muscles as seen from the left side. Here I am puzzled by the three heads of the *splenius capitis*. I turn to Percivall, and I find the *splenius* with its three heads, but no distinction between

the splenius of the head and the splenius of the neck. I read the description of Percivall—that it is attached *superiorly* to the ligamentum colli, reaching as far forward as the occiput, and as far backward as the fourth or fifth dorsal spine—*inferiorly*, to the transverse processes of all the cervical vertebræ, and to the mastoid process of the temporal bone. Here are the three heads. I can understand them perfectly, and I can understand their function too—that, both acting simultaneously, they will firmly erect the head and neck, and that one acting by itself will incline these parts to one side. I now turn to the translator of Gurlt, and I read that "the splenius capitis is situated in the nape of the neck. It arises from the serratus anticus major, and the first cervical vertebra; it therefore raises the head and neck." Whew!

The following muscle accidentally attracts my attention in the page which is now open. 13, 14, 15 Musculus triceps femoris (biceps femoris hominis). These arise from the sacrum and the ischium, and are inserted into the tibia, which they draw outward and backward when the limb is raised. This is worse than the very worst days of our worthy and competent—when he pleased—assistant demonstrator Mr. Vines: and yet you speak of the "useful and skilfully performed enlargement of Gurlt's too concise explanation." How, gentlemen, is this? Are we to add you to the tribe of critics despicable, and far too numerous, who laud and who damn many a book that they never read? No! no!! I will not allow this: but you were dozing, and your expiation must be to publish the whole of this letter, which your good sense will induce you to take as it was meant, in good part; and in the December Number to give us your opinion of the work, *after* you have read it.

I could select instances from every page in which the advanced student will be bothered from the difference of nomenclature; and the younker will too often be tempted to throw aside the book with indignation. It was, indeed, a scandalous thing, that the German professor should thus have paltered with us in a double sense—that the bookseller should have been so lost to self-interest, to say nothing of common honesty, as to publish a work comparatively useless,—that the celebrated professor to whom this work is dedicated, should not have given one guarantee of its excellence, a few hours' examination of it; and that you, the eyes of the profession, should have been so bamboozled.

THE VETERINARIAN, NOVEMBER 1, 1833.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

STRANGLES.

THOUGH, in accordance with custom, and rather than run any risk of being fouud fault with for introducing new and unintelligible names into veterinary medicine, I call the disease I am about to discourse on, *strangles;* yet is it with the impression on my mind, that the term is not only an inadequate one, but one very apt to carry with it a false notion of the disorder it is meant to designate. It appears to have had its origin in times when little more was known or thought about the disease than its evident tendency to *strangle* the patient; and from generation to generation has been handed down to the present day.

"The old English term for this disease," says John Lawrence, "was the *strangullion;*" which is evidently a corrupt rendering or transmutation of the French word *étranguillon*—from the verb *étrangler*, to strangle.

That accurate observer, the late and lamented Mr. Castley, V.S. in the 12th Lancers, who has left us an excellent paper on this subject (published in the third volume of THE VETERINARIAN, p. 426), truly remarks, that "often when a young horse is looking sickly, delicate, or thriftless, farmers or breeders will say, 'he is breeding the strangles,' or that 'strangles is hanging about him, and he will not get better until he gets over that complaint.'" The explanation of which case appears to me to be, that the animal is suffering more or less from what I would call *strangle-fever*—from a fever, the disposition and tendency of which is to produce local tumour and abscess; and most commonly in that situation—underneath the jaws—in which it has obtained the appellation of strangles.

NATURE OF STRANGLES.—Mr. Castley's paper has led me to take more extensive and somewhat different views of the subject from any I had ever thought or heard of before. It was from perusing this and comparing the account with a retrospect of

the observations that had occurred to myself*, that I was induced to believe not only that the abscess or local affection was but consecutive and secondary; but that, as Mr. Feron (in his Treatise on Farriery) has observed, "the swelling is not always confined under the jaw, but the animal frequently breaks out in several places of the body, and at different times, before it sinks, which renders the case more tedious and troublesome;" an observation since confirmed by the testimony of Mr. Dick, of Edinburgh, who observes in his lectures, "although the disease commonly terminates by an abscess under the jaw, yet it may, and occasionally does, give rise to collections of matter on other parts of the surface." To which I may add, that it appears in this character to answer every end which it did in the form of strangles. Nay, my own observations carry me even a step beyond this; and I now begin to doubt whether any tumour or abscess at all is *absolutely necessary* to answer that end (whatever it may be) which nature has in view in subjecting young horses to the disorder. I believe most horses to have, sooner or later in life, *strangle-fever;* but I doubt that every one that has that fever has it demonstrated or accompanied by local tumour or abscess. Be this as it may, however, that the tumour happens in other parts of the body, as well as the throat, is a point Mr. Castley's three cases (to which he could have added "many others") goes far to establish; and in my mind very far, because I have now others of my own to add to them. What inclines me to think that many horses, though they may, and I believe do, undergo *the fever* of strangles, do not experience the local disease, is, in the first place, because some of those that are admitted by us to have strangles, only have it in the form of a swelling under the jaw, neither very bulky nor very sensible, and

* In looking over my notes on strangles, I find the following memorandum, penned some time prior to the publication of Mr. Castley's paper:—"Cases not infrequently present themselves, in which the cellular tissue covering the parotid gland, before the root of the ear, in the hollow between the branch of the jaw and the vertebræ, becomes the seat of abscess. Is this to be considered, when alone, as the disease itself; or merely as a precursor or sequela?"

which is often resolved by a blister; and, secondly, because out of the many young three-and-four-year-old horses which I have for many years had the medical superintendence of, I should say that not above one in four of them underwent regular strangles; though very many of them at one time or other sickened. I have at this present moment, in my own possession, a young horse, whom I purchased of the gentleman who bred him. He is now four and a half years old, and has never had strangles; though he has, in the course of the last winter, sickened three or four separate times. Another colt, that was purchased at the same time, and of the same person, and that is a year older than my horse, has never had strangles. When I come to turn these facts over in my mind, and compare them with the accounts of the disease transmitted by old authors of treatises on farriery, I can hardly reconcile the one with the other without coming to the conclusion, that strangles must be a disease of *less general occurrence than formerly*. It is, in course, to be admitted, that many of the young horses we obtain in regiments have had the disease prior to purchase: I cannot, however, bring myself to believe that this has been the case with so large a majority as I find apparently escaping it. Let other veterinarians turn their attention to these interesting points: we shall then probably, ere many years pass over our heads, elicit some curious if not valuable addition to our present stock of information on the subject.

Peculiarities of Strangles.—The disease is said to resemble small-pox or measles in the circumstances of its being an eruptive fever, and one that occurs but once in the animal's lifetime: and there appears some truth in this. In my own practice (which, from having been mostly in the army, is one well calculated to throw light on this point) I do not remember to have met with any decided cases of secondary strangles, unless it be in the form of what is called *vives*: a term, grooms and farriers seem in the habit of applying to any subsequent tumour about the throat; though Gibson (who is good authority in these matters) says, that it consists in "a swelling of the glands or kernels under the ears of a horse." But there is another question for consideration. Does strangles, *in any form*,

occur in *all* horses? I should answer, No! many, in my opinion, escape it.

Contagiousness.—I would omit this paragraph altogether, were it not that I feel desirous to express, as my opinion, all disbelief in the *contagiousness* of strangles. All the observation and experience I dare boast of, have confirmed me in this opinion. Of inoculation for the disease I know nothing. There are those who assert that it is in that way communicable. It may be. It certainly is not "catching," in my firm belief.

Age and Season.—The age, and, indeed, the time at which the animal breeds this disease, will very much depend on his removal from the field to the stable: though now and then colts contract it at grass. Generally speaking, the third and fourth years—they being commonly the period of domestication—are the ages in which we meet with strangles; and at the fall and spring of the year in particular: these seasons being the most variable; as well as the times at which more horses are housed than in summer and winter. A colt, bred by my father, had the disease at six months old; and the late Mr. Coward informed me, that he had observed the disease at three months after birth.

Causes.—Along with other inflammatory affections, we find strangles among the consequences of domestication. The seeds of the disease, which we imagine to be by nature sown within the animal's body, appear by such a change to be set germinating; and the product thereof is strangles. How all this is brought about, or what is the nature or design of the disease, we are, and probably ever shall remain, in ignorance.

Symptoms.—Strangles being set in action by the same causes that excite catarrh and other inflammatory disorders, it very often happens, that the disease is ushered in or accompanied by catarrhal symptoms; though, in other cases, we are forewarned of its approach only by the feverish and unhealthy state the animal is evidently labouring under. The horse is dull and mopish; squeamish in his appetite; coughs now and then, perhaps; his coat looks dead and rough; his skin feels tight; he is evidently unthrifty; his pulse is somewhat accelerated; his mouth has a dryness and warmth about it not altogether consistent with health.

He is probably cutting his corner incisors or his tusks at the time. We hardly know what is amiss. We may suspect, from all circumstances put together, that he is "breeding the strangles." After a while we detect a tumour under the jaw, or, perhaps, two distinct swellings: we then pronounce that the horse has got the strangles. In other cases there exists a discharge from the nose, reddened Schneiderian membrane, sore throat and cough; and strangles supervenes on these symptoms.

The Submaxillary Tumour is often knotty and divided on its first appearance; as if the *glands* received the primary attack. Commonly, it is slow in its progress; though I have known it appear quite suddenly, and spread and enlarge with great rapidity*. As it spreads, it becomes diffused in the cellular tissue included in the space between the sides and branches of the lower jaw, involving all the subcutaneous parts contained in that interval, indiscriminately, in one uniform mass of tumefaction. While this general turgescence is going on, various parts in the immediate vicinity likewise often take on the same kind of action. In particular, the salivary glands, the parotid, sublingual, the throat, the pharynx and larynx, the nose, the lining membrane, the nostrils, the sinuses, the mouth, the tongue, the cheeks, the lips: in fine, in some very violent cases, the whole head appears to be involved in one general mass of tumefaction; while every vent is running over with discharge. Our patient, experiencing this violent form of the disease, is in a truly pitiable plight. While purulent matter is issuing in profusion from his swollen nostrils, and slaver foams out from between his tumefied lips, his throat and air-passages are so plugged with collections of matter, that it is quite distressing to hear the noise he makes in his painful and laboured efforts to breathe. In such a case as this there is imminent danger of suffocation; and even though

* I remember the case of a horse, belonging to the artillery, who, within the space of twenty-four hours, had a tumour form on the off-side of the submaxillary space to the size of a goose-egg. The animal being at the time in the infirmary for catarrh, the circumstance became accurately noted by those in attendance, as well as by myself. The tumour suppurated in the usual manner.

we should be able to afford the animal relief, so far as his breathing is concerned, by the operation of *bronchotomy*, yet, from the pain and irritation he is suffering, added to the impossibility of his getting aliment into his stomach, must he speedily sink to rise no more. Fortunately for us, however, and still more so for our patient, it is but rarely that the disease assumes this malignant and dangerous form. In a general way, the tumour continues to augment daily, and become more prominent. Feeling at first firm and resisting, but now opposing less resistance to pressure, becoming soft, and tense, and fluctuating, and finally *pointing*: by which we learn, that the contained matter has now arrived immediately beneath the skin—that the abscess is *ripe*, or quite full of matter, and in a fit condition for evacuation. It does not always happen, however, that the tumour suppurates, and comes to a head externally. In some cases it appears to be carried off through a sort of revulsion internally, occasioned by a catarrhal flux from the nose, in which form it is called *false* or *bastard strangles*. In other cases, it disappears without any apparent discharge or flux whatever; the tumour becoming spontaneously *resolved* or *absorbed*: an event that commonly happens, when it does take place, while the swelling is yet small and composed of solid matters only; though it may happen even after matter is deposited. Respecting this absorption or

Repulsion of the Tumour, there is a division in the opinions of professional men: some favouring the notion handed down to us in most works on farriery, and very prevalent, even now-a-days, among the gentry of the stable, viz. that, by bringing the abscess forward "somewhat obnoxious to the constitutions of young horses is discharged;" while others (among whom I must enter myself) apprehend that the same benefit is derived, though the tumour be resolved, as when it imposthumates, and its contents become discharged. The former opinion appears not only to me, in the light of doctrine irreconcileable with the present state of pathological science, but is one which all the observation and practice I have had, I must say, runs counter to. Indeed, so far from believing any thing of the kind, I am inclined to the opinion, that many horses escape strangles altogether.

Even with those that do seem to undergo the disorder, local abscess does not invariably occur; nor, indeed, do I consider it *essential* to answer the ends of nature. P.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Traité Elémentaire de Matière Médicale et Pharmacologie Vétérinaire: par M. Moiroud. Paris, 1831.

(Continued from p. 236, vol. v.)

We shall occasionally resume our review, or rather analysis of this work, if it is only to put our readers in possession of the opinion of our continental brethren respecting the medical properties and effects of the different articles of the veterinary pharmacopeia.

Laxatives.

Manna.—The purest manna may be given as an article of food, and then, being perfectly dissolved in the stomach, it has no purgative effect; but the coarser species of manna resist the power of the stomach, and thus pass into the intestines without having been decomposed: the intestines, irritated by the presence of the drug, increase their peristaltic motion in order to expel it the more quickly, and with it, and after it, they expel a part of the stercoral matter which they contain. Manna is, therefore, used in inflammatory complaints, the resolution of which we usually endeavour to effect by evacuants: we, however, give it only to the small quadrupeds, because it would require too expensive a dose for the larger ones. Some have recommended it in small doses, in chronic pulmonary catarrh. We have tried it in the horse in doses of two ounces, incorporated with honey, and continued it during fifteen or twenty days, but without any good effect.

It is given to the carnivora in doses of about two ounces dissolved in water, broth, or milk; but I think that a smaller dose repeated daily is more beneficial in chronic bronchial catarrh, and especially in that which accompanies the distemper in dogs.

Cassia.—This is a mild laxative, very useful in most visceral inflammations, and principally that of the liver; but the use of which is limited by its great price, compared with the quantity necessary to be given.

Tamarinds.—The pulp of this fruit acts on the animal economy much like that of cassia, but is more cooling and refreshing: it is indicated in all acute inflammations, but is seldom used on account of its price.

Castor Oil.—This is a very mild purgative, and is indicated in all those cases in which it is expedient to evacuate the bowels without irritating the primæ viæ. We have given it with success in stomach-staggers in the horse, and in stercoral colic: it is given to the dog in obstinate constipation, to which that animal is more subject than the herbivora. The dose is one pound for large animals, and two or three ounces for the small ones. It should be beaten up with thick mucilage, honey, or the yolk of an egg. It is given with benefit in cases of worms, not only on account of its poisonous action on them, but as promoting their expulsion like other purgatives. The seeds are sometimes given to pigs and to dogs as a purgative, to the number of four, six, eight, or ten, bruised, and in a small quantity of aliment.

Second Class of Special Excitants,

MEDICINES WHICH ACT PARTICULARLY ON THE STOMACH, TENDING TO EXCITE ANTIPERISTALTIC MOTIONS, AND THE REJECTION OF ITS CONTENTS.

Emetics.

We shall not describe the series of phenomena which precede, accompany, and follow vomiting; nor search into the circumstances which oppose that operation in the solipede and the ruminant: it will be sufficient for us to observe, that among these animals emetics do not ordinarily produce even nausea; and that the return by the mouth or the nostrils of substances contained in the stomach (the fourth stomach) is always a pathological fact of a very serious character. We are deprived, as it regards them, of a resource by means of which we are enabled to accomplish many important indications in the medical treatment of carnivorous animals. Emetics are often employed as simple evacuants; in recent cases of poisoning, in indigestion, and in bilious affections, we have recourse to them to produce a sort of revulsion to the intestines, or the secretory organs, or the skin; and also in bronchial catarrh, in the distemper of dogs, and in some exanthematous affections; and we endeavour to make use of the general disturbance which they cause in the constitution, in cases of asphyxia, syncope, and certain morbid conditions, the characters of which are obscure. The practitioner is thus sometimes enabled to impress a pathological character, and a determined physiognomy on the disease that he has to combat, as well as a regular succession of symptoms.

As we use but few emetics in veterinary practice, I shall confine myself to emetic tartar, ipecacuanha, and stavesacre.

Emetic Tartar.—This medicine acts locally, in the same way as the most violent irritants. Applied to the skin, it produces redness, and, very frequently, a pustular eruption. Administered internally, it excites the mucous membrane of the gastro-intestinal canal; provokes vomiting in carnivorous animals, and sometimes also causes alvine dejections. It results from the experiments of M. Magendie, and some of my own, that this drug may be administered with impunity to the amount of a drachm to adult dogs of a moderate size, provided that vomiting is produced; but otherwise, eight or ten grains will often suffice to occasion inflammation of the mucous membrane of the digestive canal.

Injected into the veins, deposited on the cellular tissue, or brought into contact with any other absorbent surface, it is followed by nearly the same effects. When animals are destroyed by it, we do not always find evident traces of inflammation, either of the stomach or the intestines, and still seldomer in the lungs.

In the solipede it sometimes produces nausea, and even violent efforts to vomit; but these efforts are never followed by the rejection of the contents of the stomach: it acts simply in the same manner as the purgative irritants.

The quantity which may be given them with impunity varies according to their idiosyncrasy, and the nature and intensity of the disease, and whether or not they have been habituated to its use. I have been able, by commencing with two drachms, to increase the dose of this medicine gradually to six ounces on a glandered horse of small size, without there resulting any remarkable or permanent derangement of the principal functions. After the administration of each dose, the mouth was filled with a frothy spume, and the pulse became, occasionally, a little intermittent: but these symptoms soon passed over; the animal regained his ordinary appetite; and digestion seemed to be performed as in a state of perfect health. The excrement preserved its usual consistence. At length the animal was killed; and on examining him, we found on the mucous membrane of the stomach, much redness, and many ulcerations, analogous to those which follow the pustules which emetic tartar raises on the skin. This substance, given by Gilbert in doses of ten drachms to the cow, and two, three, and four drachms to the sheep, produced no remarkable effect. It seems, however, that six drachms administered to another sheep by the same experimentalist, caused death.

Emetic tartar is commonly given internally in doses of from two to eight drachms to the horse, and from one to twelve drachms to the dog, attending to their size and the indication which it is wished to accomplish. We may doubtless in some cases augment these doses with safety, particularly if we have arrived by degrees at the maximum dose which was last employed; for habit has such influence on the effect of this remedy, that after the second or third day of its exhibition it produces, neither in the human being nor in carnivorous animals, either vomiting or an attempt to vomit. It has been customary to dissolve emetic tartar in water previous to its being administered; but Wyborg, and after him Gohier, think that it is best administered, in large doses, in the form of a ball; and that then neither the stomach nor the bowels are so much inflamed. Notwithstanding the authority of these two celebrated professors, we generally prefer the liquid form, because the medicine is then applied over a larger surface; is more readily taken up by the inhalent vessels; and has more decided effect on the general economy. I would, however, with Wyborg, give it in the form of ball when I wished to excite the peristaltic motion of the stomach, because it would remain longer in the stomach under that form, and produce intenser stimulus of its coats.

We may avail ourselves of the stimulating effect of emetic tartar on the skin, in cases of deep, old, and obstinate inflammation. When it is used as an external stimulant, it is usually incorporated with lard, in the proportions of one part of emetic tartar to six of lard.

Ipecacuanha.—Administered to the dog in doses of ten or twelve grains, it produces vomiting, and sometimes also alvine dejections. It is less sure in its action than emetic tartar; nevertheless, there are cases in which it is to be preferred, because it does not irritate the stomach so much. Administered in very small doses, it seems to give tone to the different organs. Induced by this, Bourgelat often gave it in thick wind; but never with success. The powdered ipecacuanha may be given to animals in doses of from two grains to thirty or forty, according to the species, the size, the constitution of the subject, and the indication which is to be effected. It may be given in the form of an electuary, or suspended in water, milk, or broth.

Stavesacre.—The grains of stavesacre, reduced to powder or macerated in boiling water, act as one of the most violent emetics and drastic purgatives. It is sometimes given in powder in the distemper of dogs, but never without danger. After having been reduced to powder, and either incorporated with some

greasy matter, or infused in water or vinegar, it is sometimes employed externally, in order to destroy vermin of different sorts on the skin.

Third Class of Special Excitants,

MEDICINES WHICH ACT MORE PARTICULARLY ON THE KIDNEYS, AND TEND TO INCREASE THE SECRETION OF URINE.

Diuretics.

Diuretics do not usually exercise any primitive general influence; that is to say, they do not primarily modify either the digestion or the circulation, or the greater part of the other functions. Their immediate effect does not extend beyond a simple diuresis. Under their influence the urine is not only increased in quantity, but often changed in quality; thus, after the use of turpentine, it strongly yields the odour of a violet. Diuretic medicine, in diminishing the aqueous part of the blood, gives a new activity to the interstitial absorption, and particularly to that which takes place in the areolæ of the cellular tissue, and in the great splanchnic cavities. It is thus that we explain the species of revulsion which this medicine seems to produce in certain cases; for we cannot believe that the renal excitation which accompanies it is capable of being the only and essential cause of these phenomena. But, however that may be, diuretics are plainly indicated in most species of dropsy, in anasarca, in the rot in sheep, in œdema, in grease, and in many other cutaneous affections.

There are some diuretics which, with moderate care, pass from the primæ viæ into the circulation, without producing any local irritation, and that can, therefore, be employed with advantage in the treatment of inflammatory diseases. Such are nitre, and other diuretic salts. But there are others more essentially irritating, such as resinous diuretics, and which would generally be prejudicial in such diseases. Although the first are rarely contraindicated in an imperious manner, there are nevertheless some circumstances in which they can do much mischief. It is so in retention of urine, when we often see them aggravating the sufferings of the patient by increasing the quantity of that fluid, which ought not to be secreted at all, and the presence of which in the bladder makes us fear the most fatal accident every minute. It is bad practice, then, to have recourse to diuretic medicine in these cases; nor is it often employed in irritation of the urinal passages. If it is administered, it is of the mildest nature, and dissolved in a great quantity of bland fluid. This precaution is particularly important when the kidneys are the seat of inflammation; for every cause of direct excitation of that part cannot then fail of aggravating the evil.

Diuretic Substances belonging to the Mineral Kingdom.

Although all the soluble salts whose base is potash, soda, magnesia, or lime, have the property of exciting the secretion of urine, very few among them are used in veterinary medicine.

Nitrate of Potash.—Of all diuretic medicines, the nitrate of potash is that which is most frequently employed in veterinary practice; because it is one of the most powerful, the cheapest, and the most convenient to administer. It has a specific influence on the kidneys, for it produces considerable increased activity in these organs, without occasioning general irritation; not even that of the mucous membrane of the gastro-intestinal canal. Nevertheless, if it is employed in very large doses, as eight or ten ounces, on the horse, it intensely irritates the mucous membrane of the intestines, produces a species of super-purgation, and many other disorders, which may even terminate in death. Having been given in the veterinary school at Lyons to two horses in doses of eight ounces, dissolved in a pint of water, it destroyed them in four-and-twenty hours, with all the symptoms of violent intestinal inflammation: the mucous membrane was ulcerated through its whole extent. According to M. Orfila, it destroys dogs in doses of two drachms: the same author thinks that it is not absorbed when applied to the cellular tissue; and that consequently its effects are merely local.

Administered as a curative medicine, and with proper precautions, it diminishes the temperature of the body, and the force and frequency of the pulse; but these effects are not to be attributed to any primitive and direct cooling property in the medicine; they depend more on the diminution of the mass of blood, and the more rapid renewal of the aqueous fluids that form its base, and which are the necessary consequences of increased activity in the urinary secretion.

This salt is, therefore, very useful in inflammatory complaints, and particularly in those which have a tendency to terminate in effusion, as pleurisy, peritonitis, &c.

It is, perhaps, injurious in acute inflammations of the digestive canal. In order to produce its advantageous effects, it should be given to large animals in quantities of from one to four ounces in the twenty-four hours; and the use of it should be continued for some days, if not some weeks; for it has been remarked, that it is necessary that the blood should be, in some degree, saturated with nitre, in order that its diuretic power should be fully developed.

Carbonate of Potash.—This salt is rarely employed internally; nevertheless, administered in moderate doses, it acts in

a decided manner on the urinary secretion, and influences not only the quantity but the quality of the urine; for that fluid becomes more aqueous, and contains less uric acid both in man and carnivorous animals. It actively produces internal absorption; but more, perhaps, from its diuretic property than from any special effect on the absorbent system. It is given to large animals in doses of from four drachms to an ounce and a half.

Dissolved in pure water, it becomes an excellent detersive, and is employed on sanious ulcers; also in cases of chronic grease, and in some analogous cutaneous affections.

Carbonate of Soda.—This salt possesses the same properties, but in a less degree, as the carbonate of potash; but it is not so generally used.

Acetate of Potash.—Administered in a dose of about two ounces, it acts as a simple diuretic; if three times that quantity is given, it becomes a purgative. It is an excellent diuretic for herbivorous animals; and is, at the same time, a refrigerant. Its use is indicated wherever nitrate of potash is employed; and, perhaps, it is preferable to the nitrate, as being more of a refrigerant. I believe that its use is very much neglected among veterinarians.

Acetate of Soda.—This has nearly the same chemical and medicinal properties as the acetate of potash.

Soap.—This substance is nothing but the combination of soda, or of potash, with the acids that result from the decomposition of adipose matter; and hence the saponification. Administered internally, it is a diuretic. It enters into the composition of some ointments; and, dissolved in certain stimulating liquids, it is used externally as a friction for indolent tumours.

Extracts.

Inversion of the Vagina and Uterus in a Cow, complicated with Mephitic Indigestion.

By M. Prettot, *V.S. to the 7th Dragoons.*

On the 29th of January, 1832, at eight o'clock in the morning, I was desired to render my assistance to a cow, which, after a labour difficult and protracted, had inversion of the womb. The beast, purchased three months before, was beautiful; she was six years old, and for some days past they had made her eat more than was usual, that she might have sufficient strength to produce her calf. At my arrival, three hours after the accident,

the patient, who had suffered much, still possessed a good deal of strength. She was agitated; her pulse was hard, small, and accelerated; the skin and the extremities were cold; the muzzle dry; the eyes wild; and the respiration accompanied by a plaintive sound. She lay down and raised herself again every minute, making violent efforts as if to expel something. The womb was completely inverted and protruded. It hung down as low as the hocks. The contact of the cold air, and of the straw, dung, &c., had so irritated it, that the mucous membrane was of a violet colour, thickened, œdematous, ulcerated, and everywhere cold.

Before I proceeded to the reduction of the part, I took away a portion of the placenta, which yet adhered; I cleansed the uterus from the litter and dung with which it was covered; I emptied the rectum and the bladder; and I washed the protruded womb with a warm mucilaginous decoction of aromatic herbs.

All these things being carefully done, I attempted the reduction, which was very difficult. Two persons sustained the uterus by means of a cloth, and we had hard work to overcome the resistance occasioned by the volume, the thickness, and the weight of the womb, and more particularly the continued and violent efforts of the patient to expel it again. Nevertheless, I at length succeeded, with no other accident than the tearing off of a few of the uterine cotyledons, and from which there was little or no hæmorrhage. I then proceeded to endeavour to prevent the return of the accident by means of the pessory, with the broad shield expansion at its base, recommended by M. Le Blanc. A bleeding of eight pounds was made from the saphena and teat veins; and vapour baths, emollient injections, and drinks of the same nature, rendered slightly narcotic by a decoction of poppy heads, were administered. But soon the beast made new and violent efforts; a considerable enlargement of the abdomen began to be visible; and the matrix was again displaced. Eyes starting from their sockets, a pulse almost imperceptible, respirations short and strangely accelerated, extremities cold, all announced approaching death. The general oppression was at its height, and the danger of suffocation was imminent, unless puncture of the rumen was immediately performed. The proprietor regarded her as lost. I had a straight bistoury; I plunged it vertically into the paunch, directing its point towards the middle of the left flank: in an instant the gas, and the aliments which distended the stomach, escaped with impetuous rapidity; and the beast experienced, all at once, a marked relief. I fixed in the opening into the rumen a tube of elder-wood, with its pith withdrawn. I replaced the uterus, and prescribed a severe diet, cooling drinks, injections,

and vapour baths, as before; besides which I ordered little bags of scalded bran to be placed on her loins, and the extremities to be frequently and well rubbed. I then retired, retaining little hope of saving the patient.

My fellow-practitioner, M. Riquet, to whom I imparted the state of the beast, and my inquietude, had the kindness to render me his advice and assistance.

On my return to the cow, an hour afterwards, I found her lying down. The womb had been again protruded a few minutes before: it was very hot, and excessively inflamed. Driven almost to despair, I made several scarifications along the mucous membrane of the everted viscus: a great quantity of bloody serosity flowed from them, the continued discharge of which I, after a while, arrested by means of anodyne and astringent lotions, produced from a decoction of linseed and poppy-heads, cooled and whitened by the acetate of lead. I then occupied me for the third time in effecting a reduction of the uterus; but perceiving that the fulness of the rumen now rendered this difficult, if not impossible, I extended the incision in the flank to four or five inches, in order to facilitate the extraction of a part of the alimentary mass. I easily withdrew three gallons of the macerating food, and I poured in, by the same opening, several cordial drinks. M. Riquet, who had assisted me by his advice, now kindly prepared for me a bandage, simple in its construction, and which afforded an effectual support to the part, without irritating an organ already so much injured.

Three hours after its application, we found the animal lying down, out of spirits, and knocked up. Nevertheless, the difficulty of breathing was not so great; the pulse, not so small, beat ninety times in a minute; there was want of appetite, neglect of her calf, but the extremities were not so cold, and the warmth of the skin began to return. The same means were continued, the diet, drinks, injections, warm applications to the loins, vapour baths, and astringent lotions externally.

At 10 o'clock at night the beast was already better; her muzzle was not so hot; she was standing; her pulse had fallen to 75, it was more developed, and the breathing was freer. We continued the same treatment until the 2d of February, when we withdrew the bandage. The patient was very weak and poor, and the gas continued to escape in great quantities through the opening into the rumen: nevertheless she began to ruminate, and the appetite then returned. The pulse was good, the respiration undisturbed, the skin was not so dry, the hair had lost its roughness and the muzzle its dryness. I ordered light food, the strictest attention

to cleanliness, good litter, moderate warmth, and occasional injections.

5*th.*—The amendment is remarkable; the teats are increased in size, and, having been repeatedly solicited, now execute their functions regularly, and a little milk is given: but she gets thinner, and the membranes appear to be discoloured. I ordered kitchen salt to be mixed with her food, and half a bottle of warm wine to be administered morning and night, with an equal quantity of water, and four ounces of powdered gentian root.

9*th.*—The cow is regaining her appetite and spirits; her pulse and her respiration are regular; the muzzle is moist and cool; and every thing is going on well. Nevertheless she is very thin, and a certain quantity of gas, mixed with alimentary substances, is discharged through the wound. These substances sometimes remain between the rumen and the parietes of the abdomen, and I am fearful of peritonitis. I used to withdraw them as well as I could. Again and again I enforced the necessity of cleanliness; and ordered the orifice to be often bathed with emollient lotions: but my occupations would not permit me to be always there; and I passed two or three stitches through the edges of the incision.

10*th.*—The ligatures have given way; the edges are lacerated and swelled; and the rumen has been strangely distended during the night. It was the violent breaking out of the gas which tore the wound so much; something like a report was heard at a considerable distance. Low diet; frequent emollient lotions; dress with soft tow, covered by simple digestive ointment.

12*th.*—The wound looks well, and there is a healthy suppuration from it. The general state of the beast announced approaching recovery. More substantial food was administered, and the salt and gentian continued.

16*th.*—The amendment proceeded; but the wound, from which gas was constantly discharged, looked of a livid colour. It was dressed with a vinous infusion of aromatic plants, and the digestive ointment on the tow was rendered more stimulating.

20*th.*—The milk is more abundant, and of good quality; the wound looks better, and seems to be rapidly healing.

From this date I ceased my visits; and sometime afterwards I learned that she was once more the best milker, and the most beautiful cow in the dairy.

Cases of Croupal Angina, with false Membranes thrown out on the pituitary one.

By M. Riss, *V:S. to the 4th Chasseurs.*

The name of croup has been given to an inflammation of the larynx, of the trachea, and of the bronchi; and which has for its distinctive character, to be quickly followed by the formation of false membranes, that cover the interior of the air-passages, and produce difficulty of breathing, suffocation, &c.

About half past eight o'clock on the evening of the 1st of April, 1829, we were informed that there was a fire in one of the stables of the barracks at Neuf-Brissach, which were occupied by the horses of our regiment. M. Meyer and myself immediately went there. On our arrival, the colonel ordered us to take all possible care of two horses that had been nearly stifled in the stable where the fire had broken out. The following was the account which was given us of the affair.

The guard of the stable had been absent a few minutes, and on his return he found the stable filled with smoke. He gave the alarm of fire, and his companions speedily arriving, some of them occupied themselves in removing the horses, which were twelve in number, while others threw water on the burning litter. For a moment it was thought that all the horses had been saved; when, from the noise which they made in plunging about and in coughing, it was perceived that these had been forgotten. They were, however, at length got out, with great difficulty and danger. They were a horse and a mare belonging to the third squadron. All the hair of the tail, and that which covered the hinder extremities, and partly under the belly, was burnt off, without, however, the skin being materially injured. They could scarcely stand, except with their legs quite wide apart; they were covered with perspiration, and there ran from the nostrils of the mare, which was very delicate, a great quantity of yellow mucus; and there was considerable weeping. The breathing was quickened, and extremely laborious in the horse, accompanied by a cough, particularly sonorous, and the fits of which were frequent: the air expired was hot. The principal difference between these two animals was, that in the horse the pulse was full and oppressed, while in the mare it was small and accelerated.

We ordered them to be led to our infirmary, and abstracted ten pounds of blood from the jugular of each. I then directed the administration, every hour, of gargles, composed of water with honey dissolved in it, and slightly acidulated; emollient fumigations for the nostrils, and injections of the same kind.

At two o'clock in the morning there was little change in the symptoms already described.

At six o'clock we remarked very great increased sensibility of the larynx; the mare particularly could scarcely bear it to be touched. The cough was frequent, by fits, and very painful; and the breathing was also painful. We could hear the whizzing in the larynx, accompanied by a kind of gurgling sound all along the windpipe, and stronger in the mare than in the horse: the same discharge from the nostrils that had been observed at first in the mare was now seen in him; the pulse was unchanged in both of them; the eyes were clear and fixed, starting, as it were, from their sockets; while tears ran plentifully down their cheeks.

At half past six o'clock I repeated the bleeding, and took nine pounds from each. I ordered that the nostrils should be frequently washed with warm water, and the unguentum populeum applied to the larynx, which should be wrapped in flannel.

Between eight and nine o'clock the mare seemed to suffer some colicky pains; she looked at her flanks; she appeared to be preparing to lie down, but did not dare to accomplish it. These symptoms were followed, all at once, by frequent evacuations of liquid fæces, black, fœtid, and accompanied by flocculi of albuminous matter.

At four in the afternoon all the symptoms were increased in intensity. The breathing of the mare was particularly hoarse and loud; but it was more painful, because that the humour which had run from her nostrils had become so thickened, that it had taken the form and organization of a false membrane, that covered the whole of the nasal cavities, and obliterated the natural openings. The portions which we could detach by means of the fingers, or by injections of cold water a little acidulated, or when the head was slightly shaken, were very large, of a deep yellow colour, and with a smoky smell. The pulse was a little accelerated; liquid fæces were discharged from time to time.

The discharge from the nose of the horse had not changed its appearance; in fact, there had been no change of symptoms in him since six o'clock in the morning.

I attempted to bleed from the jugular a third time, but could only obtain about six pounds of blood. I persisted in the treatment which I had adopted.

23d.—The breathing of the mare was more free; she had ejected a great part of the false membranes that existed in the nasal cavities.

24th.—At four o'clock in the morning the assistant farrier, who had set up with these horses, brought to me a portion of false membrane, of a deep yellow colour, like that which had been already ejected. It was four inches long, more than three

in width, and at least a line and a half in thickness; one side of it was smooth, and the other rough, and thick set with little bloody points. It had been ejected from the mouth of the mare after a violent fit of coughing that had taken place about two o'clock, and which had been so exhausting that she was covered with perspiration.

At six o'clock in the morning another fit commenced, and the animal ejected from the nostrils, in our presence, a new portion of false membrane.

At noon, a third portion was found in the manger. From this moment the symptoms diminished insensibly; the anxious countenance disappeared; the respiration became freer; and we heard no more whistling in the larynx, or gurgling along the trachea: the cough was comparatively seldom heard; there appeared from the nostrils a discharge of grumous mucus, but whiter than on the first day; in fine, the animal was much better; she searched the manger for something to eat, but we allowed her only a few swallows of white water with honey.

On the following days she ejected some more pieces of false membrane; she became evidently better; she regained her appetite and her ordinary spirits; but it was not until the 10th of May that we could regard her as cured: and even then her flanks heaved like those of a thick-winded horse; but this by degrees disappeared.

I now return to the state of the horse.

24*th*.—I thought that the gurgling, which before was heard along the whole extent of the trachea, was more sonorous at the inferior part, where it enters the chest. The same treatment as on the 23d.

25*th*.—At five o'clock in the morning the symptoms retained all their intensity.

At two o'clock in the afternoon the difficulty of breathing was considerable. The animal, from time to time, suddenly held his head low down, and raised it and depressed it again, endeavouring to expel something from the throat; a violent convulsive cough then came on, which threatened immediate suffocation; the body was covered with perspiration, and the beatings of the flank were increased. The pulse was small and hard.

After having seriously reflected on this series of alarming symptoms, and that there was reason to fear that the animal would be suffocated, we decided on practising the operation of tracheotomy.

It had scarcely been performed, when the distress of the animal disappeared. We no longer heard the laryngo-tracheal whistling, nor the gurgling which before extended along the trachea; and

the beating of the flanks was not so violent. We injected by the opening three ounces of warm water, in which two drachms of common salt had been dissolved, that we might provoke pulmonary action sufficiently strong to reject, or rather to detach, some portion of the false membrane, which we suspected to remain in the trachea. A violent fit of coughing came on a little while afterwards, which lasted a good ten minutes, and caused a rejection from the nostrils of a portion of false membrane, precisely like that voided by the mare, and of which we have spoken above.

At 6 P.M. the animal was much better, and took some swallows of honeyed water.

During the night he ejected other portions of false membrane, of different dimensions.

26*th.*—At 5 A.M. we withdrew the tube, in order that we might remove the mucus that partially obliterated its opening. While we were thus employed, a new access of cough took place, which caused the escape of a small portion of false membrane from the opening in the trachea. The same treatment was employed, with the addition of a seton to the chest.

From this date the animal became better. The tube was not withdrawn until the 30th: the wound was then gradually healed, and perfectly cicatrized. In fine, all the symptoms gradually disappeared, and the horse was perfectly well on the 15th of May.

Réeueil Méd. Vét. Août 1833.

A Scirrhous Production in the Cæcum of a Horse.

By M. Lautour.

Few things afford a greater proof, how often the most serious and mortal diseases are hidden (in the most extensive acceptation of the word) from the eyes of common observers, than the following case:—

The patient was a stallion, which M. Lautour had not lost sight of for more than five years, during the whole of which time he had only been once under medical treatment, and that for pulmonary catarrh, in 1827, and which had at length been thoroughly cured, as the post-mortem examination afterwards demonstrated. The animal appeared lively, and did his work well until the 21st of May, 1832, when an œdematous swelling appeared on the inside of the thigh. Until the 24th the œdema felt hot; the horse was bled twice, and he appeared to be much better: nevertheless, on the 25th, M. Lautour was called in again, and found the animal in a desperate state, stretched out like a dead horse, but having a hard pulse, and a stertorous and accelerated respiration. The

horse suddenly began to make a clattering noise with his feet, and voided a greenish urine very abundantly every time they tried to raise him, and which was not accomplished without great trouble. In spite of bleedings and gum water, and although the animal sometimes seemed to rally a little, all went on from bad to worse; the horse continued down, and died on the morning of the 29th.

At noon on the same day a post-mortem examination took place.

The lungs were very healthy; the peritoneum had several patches of red in different places, and of various extent, the smallest of which were equal to a five-franc piece in size. In some of these the colour was simply red; in others, on the large intestines, it was black; and within these large intestines the membrane was also very much diseased. The cæcal termination of the small intestine did not present the slightest trace of its original organization; it was entirely seirrhous, and was confounded with the folds of the peritoneum, which fixed the cæcum to the sub-lumbar region, and offered the same appearance. These membranous parts shewed in their folds a lardaceous texture, which in some places was four or five inches thick.

The projection that the small intestine forms within the cæcum resembled a very large apple. Several other parts of the cæcum were scirrhous, and especially its cul de sac, which displayed a kernel about the size of a fowl's egg, the texture of which was greyish and very dense. The internal membrane of the colon also presented some indurations, around which the membrane was of a greenish hue and easily torn. The mucus contained in the pelvis of the kidneys was very abundant; the mucous coats of the ureters and of the bladder were streaked with bloody ramifications, or spotted with ecchymoses.

All these lesions were doubtless of ancient date; and they did not appear to have in any way interfered with the important functions of nutrition, since the animal was fat, and had every appearance of health; nor was their formation marked by any sensible irritation, for, with the exception of the attack of pulmonary catarrh, the animal had never been ill. If inflammation had presided at the formation of these new tissues, it must have been of that very slight character which is generally so little marked as to have been designated under the name of sub-inflammation. Perhaps hereafter practitioners will give to this morbid growth another name, and will explain it by another theory: these theories and these names are not a matter of indifference, for they influence the mode of treatment. We have seen, for example, that in consequence of exclusive ideas of irritation and inflammation, lotions and emollients have been applied to the lardaceous

tissues which are developed on the inferior parts of the limbs of the horse; and the veterinarian who has recourse to these remedies, is astonished that the disease does not yield to so rational a course of treatment.

Journal Théorique et Pratique.

Miscellanea.

A Village Farrier's Evening Employment.

I recollect an anecdote told me by a late highly respected inhabitant of Windsor, as a fact he could personally testify, having occurred in a village where he resided several years, and where he actually was at the time it took place. The blacksmith of the village had got hold of Richardson's novel of "Pamela, or Virtue Rewarded," and used to read it aloud in the long summer evenings, seated on his anvil, and never failed to have a large and attentive audience. It is a pretty long-winded book; but their patience was fully a match for the author's prolixity, and they fairly listened to it all. At length, when the happy turn of fortune arrived which brings the hero and heroine together, and sets them living long and happily according to the most approved rules, the congregation was so delighted as to raise a great shout; and, procuring the church keys, actually set the parish bells ringing. Now let any one say whether it is easy to estimate the amount of good done in this simple case. Not to speak of the number of hours agreeably and innocently spent —not to speak of the good fellowship and harmony promoted— here was a whole rustic population fairly won over to the side of good—charmed—and, night after night, spell-bound within that magic circle, which genius can trace so effectually, and compelled to bow before that image of virtue and purity which (though at a great expense of words) no one knew better how to body forth with a thousand life-like touches than the author of that work.

Sir J. Herschel.

Prescription for a Cold in Horses.

Take a bottle of strong beere, boyle it a little, and then scumm off the froath; then take ½ lb. of raisins of the sunne, a heed of garlicke, and stampe them together; then take a quarter of an ounce of tobacco, and 1d. worth of treacle, and 2d. worth of browne sugar candye; 1d. worth of licoras, and as much anisseedes; let them boyle together a pretty while in the beere, and then straine them very cleare, and lett it stand until it be cold: then give it the horse and ride him a little, and set him up warme, and three houres after give him a mash.

Harleian MS.

THE

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XXXVIII.

A Sketch of the Nervous System.

I HAVE observed in a former lecture, that the cerebral and the spinal nerves present themselves symmetrically; that they are arranged in pairs, one on each side of the mesian line, that runs from the anterior portion of the brain to the cauda equina. I will first enumerate them in the order in which they present themselves at the base of the brain; rapidly describing their origin, destination, and function; we shall then be better able to arrange them according to their respective agencies, and thus, probably, get rid of a little of the mystery which has been supposed, but very erroneously, to encircle the nervous system. This will be the proper time for me to endeavour to justify my departure from the nomenclature and physiological exposition hitherto adopted by veterinary writers.

Description of the Cerebral Nerves according to their Situation at the Base of the Brain.

Commencing anteriorly, we find,—

1. *The Olfactory* nerve arising from the corpora striata and callosum; passing through the cribriform plate of the ethmoid bone, and distributed on the membrane of the nose—*a nerve of peculiar sensation,* and its minute ramifications affected only by the odoriferous particles of bodies.

2. *The Optic* nerve arising from the thalamus nervi optici, and connected by medullary striæ with the corpora quadrigemina,—pursuing its course to the back of the eye, piercing the sclerotic coat, expanding over the choroid coat, and forming the retina—*a nerve of peculiar sensation,* and affected only by the particles of light.

3. *The Motor Oculi,* from the middle of the crus cerebri to all the muscles of the eye, except the superior oblique and the abductor,—*a nerve of volunary motion.*

4. *The Patheticus,* from a little sulcus on the crura cerebri at the base of the testes to the superior oblique muscle,—*a nerve of voluntary motion.*

5. *The Trigeminus,* evidently proceeding from two roots; the inferior one from the crus cerebri—the superior one from the crus cerebelli. The superior one forming or passing through a ganglion—the inferior one unconnected with the ganglion, but uniting with the other branch immediately beyond the ganglion; and both contributing to form one compound nerve distributed over the face—*a nerve of common sensation and of voluntary motion.*

6. *The Abducens,* from a transverse sulcus between the pons varolii and motor root of the eighth pair (the portio dura of the seventh), and going partly to the retractor, but principally to the abductor muscle of the eye,—*a nerve of voluntary motion.*

7. *The Voluntary and Organic Motor Nerve of the Face,* in the old nomenclature the portio dura of the seventh, springing evidently from two roots; the first to be traced from the central column of the inferior surface of the medulla oblongata, and the other from the head of the lateral column, or corpus olivare, if it may be so termed in the quadruped; united together as they escape from the brain, and forming a compound nerve,—*the voluntary motor nerve of the face; and directing also those motions, partly voluntary and partly involuntary, which are connected with the respiratory system of organic life.*

8. *The Auditory* (the portio mollis of the seventh), traced from the floor of the fourth ventricle; passing down the side of the medulla oblongata; entering into the same sheath with the eighth (the portio dura); escaping through the foramen auditorium internum, and spreading its pulpy ramifications over the internal chambers of the ear,—*a nerve of peculiar sensation,* and affected only by the vibrations of the air.

9. *The Glosso-Pharyngeus,* arising from the lateral column of the medulla oblongata by several little filaments, partially ramifying over the constrictor muscles of the pharynx, but chiefly expended on the base and substance of the tongue. *An organic motor nerve,* associating the action of the muscles of the pharynx and tongue with the discharge of the functions of respiration and deglutition.

10. *The Par Vagum* of our anatomists—the *pneumo-gastric* nerve of the French, but, more properly, the *cerebro-visceral organic motor nerve.* It arises from the lateral column of the medulla oblongata, by numerous filaments, a little posteriorly to the glosso-pharyngeus, and escapes from the cranium in the same sheath with it. After distributing several branches to the

pharynx, the larynx, and the œsophagus, it gives large and singularly involved plexuses to the heart and the lungs; and having entered the abdomen, its ramifications on the stomach are numerous and complicated. Some plexuses go to the liver; and an important branch, uniting with the grand organic nerve of the abdomen, helps to form the semilunar ganglion,—*an organic motor nerve.*

11. Included in the same sheath with the glosso-pharyngeal and the cerebro-visceral, is a singular nerve, which anatomists have agreed to call the *spinal accessory nerve.* It is formed by the union of several minute filaments derived from the lateral column of the spinal chord, some of which may be traced as low as the fifth cervical nerve. Having, in the manner I shall hereafter describe, reached the cerebro-visceral and glosso-pharyngeal, it neither identifies itself with them, nor communicates with the substance of the brain; but turns round and escapes in the same sheath with those nerves, and, soon separating from them, is distributed over some of the muscles of the neck and shoulder, associating with them in the involuntary discharge of the function of respiration, and therefore being *an organic motor nerve.*

12. Still posteriorly, on the medulla oblongata, but rising from the central column of its inferior surface, we find the *linguales* escaping through the anterior condyloid foramina; running between the pterigoideus and the larynx; penetrating into the substance of the tongue, and giving motion to that organ. *It is a voluntary motor nerve.*

Here ends our brief catalogue of the cerebral nerves; but our subject would not be complete if I did not glance at the origins of the nerves along the course of the spinal chord. At the very point where the medulla oblongata terminates in the spinal chord, we find the first pair, *the sub-occipital,* and we may take it as a specimen of all the rest. Numerous little filaments arise from the longitudinal sulcus between the central and lateral columns on the inferior surface of the chord, but which are derived from, or may be traced to, the central column; they approximate and unite, and form a nervous chord. These, from their kind and place of origin, we should suspect to be nerves of voluntary motion. Other filaments spring from the corresponding sulcus on the superior surface, and may also be traced to the central column; but they are not so numerous, and they are larger and bolder in their origin. They also approximate and unite, and form a nervous chord; but at the point of union, and still within the dura mater, these latter form a ganglion,—a little swelling or knot,—immediately beyond which the chord shrinks again to

nearly its former bulk. These, from their kind and place of origin, we should suspect to be nerves of sensation. Then, and still within the dura mater, or at the moment of escaping from it, the two chords unite, and form a perfect but compound nerve; of which I shall say no more at present, than that it is what we suspected it to be—that it combines the properties it derived from these central columns on the inferior and superior surfaces of the spinal chord, and is *a nerve of sensation and voluntary motion.* It is distributed to the neighbouring parts, and it anastomoses with those above and below, for important purposes, which will be the subject of future consideration. At each articulation of the cervical, dorsal, and lumbar bones, as we proceed along the spine, we find one of these compound nerves. Towards the lower part of the neck, we observe filaments from the fourth, fifth, and sixth cervical nerves, uniting to form a singular nerve, which takes its course down the neck, without anastomosis, and traverses the chest, and ramifies upon the diaphragm. This *phrenic nerve* is the motor nerve of the diaphragm, the grand agent in respiration, and, therefore, we have no difficulty in denominating it *an organic motor nerve.* I shall have to shew, that it is not improbable, that although the filaments which compose it are derived from the cervical nerves, yet they may actually have their origin from that portion of the spinal chord which seems to be devoted to the purposes of organic life.

The dorsal, lumbar, and sacral nerves, have the same structure, and discharge the same function. They are all nerves of sensation and voluntary motion; and those of the extremities, derived from plexuses of the cervical and the dorsal, and the lumbar, and the sacral, possess the same character.

The Ganglial Nerve.—There is one nerve wanting to complete our list: it belongs neither to the cerebral nor the spinal system, and seems in its function to be independent of both. At the base of the cranium, and in front of the atlas, I find a pyriform reddish body, which gradually contracts, and terminates in a nerve. I inquire not now into the origin of this ganglion, but a superficial glance at the nerve tells me that it is performing some important office. It is connecting itself with the cerebro-spinal, and with every cervical nerve; but more particularly it is forming complicated plexuses on every neighbouring bloodvessel. I trace it particularly on both the external and the internal carotid, and I follow it in the subdivisions of these vessels, until, from the minuteness of the vessel and the pulpiness of the nerve, it eludes my sight. Hereafter I shall have to trace the course of the nerve in the thorax, forming, with the cerebro-visceral, a

plexus, or rather an investing membrane, around every vessel of the heart and lungs; and then, having reached the abdomen, and, combining in the semilunar ganglion its own influence with that of the cerebro-visceral and the phrenic, it becomes the sun or centre of organic nervous power; diffusing its radiations over every artery and absorbent and gland and ganglion — every thing connected with secretion, nutrition, and life — itself the very principle of life and action—the soul of the organic system. It was termed, before its character and power were suspected, the *sympathetic nerve*, because it seemed to connect the whole system together; it is denominated by others the *ganglial nerve*, from its supposed origin either in the superior cervical, or the semilunar ganglion; but it would more properly be designated *the great organic nerve*—the *secretory, nutritive, chemical*, while the cerebro-visceral is the *motor* organic nerve. It is the power which presides over, and effects the changes in, that fluid which the motor nerve keeps in circulation. But we are not yet quite prepared for this.

My object was to give you a kind of bird's-eye view of the nervous system, that we might perhaps be enabled so to class its different portions, and trace its connexions, as to remove much of the mystery that has been so falsely supposed to hang over the subject.

To the Editors of "The Veterinarian."

"Hoc opus, hoc studium parvi properemus et ampli."—HORACE.

Gentlemen,

THE late evident decrease of contributors to your periodical has not only astonished but deeply affected me. That a Journal, so ably and liberally conducted as THE VETERINARIAN has hitherto been, should be allowed to deteriorate either in the variety or importance of its practical papers, cannot be regarded, either at home or abroad, but as a professional disgrace, and must ultimately be a national loss.

Did you seek any private reputation or sinister advantage, that might be urged as a reason for the diminution of practical communications; but when it is a fact so palpably notorious that your object is the improvement of the profession, the advancement of veterinary science, and "the common weal" of our society, then I say, if your brethren do not support you by their contributions, "let *Ichabod* be written on their fronts"—"*Sed spero meliora.*" They surely never will allow it to be said, that in

England, the cradle of liberty, the nurse of science, veterinary practitioners have not the *ability* and the honest pride efficiently to support one journal.

For my own part, had not a severe indisposition, and the bustle and inconvenience attendant on a change of residence, so much increased my engagements, I should long ago have ventured to have sent a second communication to your valuable Journal;—however, I now embrace the very earliest opportunity of transmitting to you the following cases, which, if you regard worthy of insertion, are at your service.

I am, Gentlemen, your obedient servant,

G. W. ALLINSON.

Idle, Yorkshire, 2d Nov. 1833.

CASE OF HÆMATURIA.

On the evening of the 20th July, 1830, I was requested without delay to visit an aged horse (the property of Ward Grange, Esq., near Pately Bridge), that had several times in the course of the previous hour passed large quantities of blood instead of water. On my way to the place, I saw coagulated blood in three places, not far apart, every one apparently three or four quarts. I found the horse in the pasture, where they had placed him for convenience of interment, as the owner felt persuaded that the discharge was too profuse to be controuled by medicine.

Symptoms.—Pulse 75, full, strong, and bounding; bowels open; extremities warm; respiration hurried, and a slight heaving of the flanks. I was just going to open the jugular vein, when a change of posture directed my attention to the penis. After a slight spasmodic erection, 8℔s of blood were voided. The pulse was not affected by it; but there appeared a slight degree of pain on moving the hind quarters, and a curling of the upper lip that did not exist before. I then made a large opening into the jugular, from which the blood flowed rapidly; but it was not until five quarts had issued from the orifice that there was any change in the pulse, when it fell to 48. I had just secured the opening, when the animal became sick, and lay down. I administered an ounce of tinct. opii with a pint of water. In a few minutes the patient rallied, and was gently led to the stable: half an hour afterwards the following drink was given,—Powdered opium ʒss, acetate of lead ʒj, gum assafœtida ʒj, mint water half a pint.

21*st*, 5 A.M.—The animal had slept the greater part of the night, resting his nose in the manger; he was then eating tares, but he looked haggard. The pulse was 50, firm, strong, and regular; the extremities warm, respiration easy. He passed with difficulty a little water, which was very high coloured: the fæces that had been voided during the night were very dry. I ordered a ball, consisting of aloes ʒj, tartarized antimony ʒss, powdered digitalis ʒss, bals. copaiba ʒij, powdered linseed ʒvj, honey q. s., which was repeated at noon, and in the evening; gruel for drink.

22*d*, 6 A.M.—He looked better; he had lain down during the night. The pulse was 40; the bowels open. He staled without difficulty, and the urine was not high coloured. A little gruel was given every two hours, and half an hour's exercise was ordered.

23*d*.—He looked lively; the bowels were regular; the pulse as yesterday. Having voided a little blood in the night, I ordered aloes ʒiij, acetate of lead ʒj, powdered opium ʒss, powdered linseed ℥j, honey q. s., made into two balls, one to be given at noon, and the other at night.

24*th*.—Quite well; pulse 38; the urine of its natural colour. On the following day he was put to work, and did not appear debilitated. Performed his daily labour (drawing coals to a lime kiln) for four months, when he was sold.

Remarks.—In treating the preceding case of Hæmaturia, I took into consideration circumstances connected with the animal that a stranger could not have known, and which the owner would never have thought of communicating. He had had the horse about two months, and the animal, when bought, was extremely low in condition. They had placed him in a very luxuriant pasture, where there was red and white clover in abundance, and almost every other grass that is rich in nutritive power. The horse being a ravenous feeder, consumed a great quantity of food, which being of a better quality than he had been accustomed to, blood was formed faster than the system could deposit it in the shape of fat and muscle, and it made its exit from (I suppose) the weakest vessel.

OPENED KNEE JOINT.

A four-year old mare, nearly full-blood, was brought to me on the 12th of October, 1831, with a stream of blood issuing from among a heap of bandages surrounding the left knee. She had met with the injury when drawing a loaded cart up a

very steep hill, by striking her knee against some bars of iron that projected from behind a cart that preceded her.

I was obliged to apply a ligature above and below, before I could control the bleeding. When I had removed the bandages that surrounded the knee, by means of assiduously washing *all* the coagulated blood, the knee presented an appearance similar to what might have been expected if it had been frequently struck with a blunt chisel. On more close examination, it was evident that the capsular ligament was lacerated. Synovia was flowing from between the two rows of bones; the brachial vein was torn open, and there were numerous other lacerations. I applied the actual cautery to the ligament and the vein; then, with the aid of adhesive plaster, I adjusted the lips of the wound, and, by means of a long bandage and splints, prevented the possibility of the mare bending that joint. A large poultice of linseed meal was applied over all. Though apparently a considerable quantity of blood had been lost, yet the animal was in a high state of excitement; pulse 60, and very strong: I therefore abstracted eight pounds of blood from the jugular, and gave aloes Barb. ʒij, antim. tart. ʒj, pulv. digitalis ʒj, in a ball with honey; repeating the ball six hours afterwards.

13*th.*—The limb was swelled, but not painful when touched; pulse 55; bowels confined; urine high coloured. The patient was very restless; she had gruel to drink; and very little hay. The medicine was continued, and the poultice renewed.

14*th.*—Bowels open; pulse 40; the patient much improved.

15*th.*—Not so well; considerable degree of fever: she had not eaten her night's feed; pulse 58, hard and wiry. I abstracted seven pounds of blood, and ordered antim. tart. ʒj, pulv. digitalis ʒiss, potassæ nit. ʒiij, in two pints of linseed gruel, and to be repeated every four hours.

16*th.*—Much better; pulse 50, but soft: continue the medicine.

17*th.*—Great improvement; bowels regular; pulse 40; swelling quite gone. The bandage and splints were loose, and, on examining the wounds, I found that adhesive inflammation had secured the lips. I applied fresh plaster and bandage and splints as before, but discontinued the poultice.

18*th.*—She was in high spirits, and ate and drank well. I removed the bandage, and applied fresh plaster with a shorter bandage without splints, and gave her fifteen minutes' exercise.

19*th.*—After being brought in yesterday she lay down (the first time since the accident that she could), and did not rise for six hours. From that time to the 26th she had daily exercise, and fresh plaster when requisite. After the 26th she was employed in her previous labour, and went quite sound. I did not

see her again until December; the wounds were then quite covered with hair of a proper colour, but a little curled.

A CASE OF RABIES IN THE COW.

By Mr. G. Bainbridge, *V.S., Saffron Walden.*

On Monday, September the 9th, I was sent for to a cow said to be mad; but being from home, I was not able to see her until the 10th, when I learned that about three weeks previously she had been bitten by a strange dog. She had shewn no symptoms of disease until the 8th, when it was found that she had not eaten her food in the night, and refused to take any water. She was turned into a field with some other cows, but was shortly found running after one and then another of them; and at length she blundered into a ditch. She was then driven home, and confined in a close yard; where she kept bellowing and running after any small animal that came near her, during that and the following day.

I first saw her about eleven o'clock in the forenoon. I found her lying with her head doubled under her flank, her countenance dull, the saliva running from her mouth, and hanging in the form of foam about her lips, the ears, extremities, and surface of the body of a natural heat; and the pulse steady at 41.

A pailful of water was set before her: she plunged her nose into it as if to drink, but suddenly withdrew it, and seemed convulsed, and unable to swallow: she bellowed mournfully. I could not make her rise; but a dog approaching her, she suddenly started up and ran after him, and seemed much excited: a fowl approaching her, she did the same: yet the pulse kept at 41, and was steady. I did not consider that any medicine could be of service; but the owner wishing something to be tried, I ordered her a strong cordial drink in some gruel, which was given to her. There did not appear any difficulty of swallowing when it was poured into her mouth; but she could not take any from the pail. The gruel was repeated several times every day until Friday the 13th, when I found her down, and unable to rise: the pulse was about 30: she was evidently suffering dreadfully, and was destroyed. I examined the larynx, stomachs, and brain, but could not find the slightest disease in any of them.

A CASE OF PALSY OF THE LIPS.

By the same.

On Monday, Oct. 7th, I was requested to visit a three-year old colt, supposed to be griped. I sent him a drink, and was informed on the following morning, that he was much better; but on visiting him in the afternoon, I found him labouring under paralysis, of which the following were the features:—the penis was drawn, and the urine dribbling away; the tail down, and the animal unable to raise it; and the fæces lodged in the rectum. The countenance was dull; the lips slightly drawn to the left side; the sight impaired, but the left eye the worst; the mouth hot; the pulse full, and sixty. He appears to be willing to eat, but has difficulty in getting the food into his mouth; and he runs his head, with his mouth open, into the manger, and shoves the food from side to side before he is able to get it between his grinders. Hay being offered to him, he appeared to masticate it very well. Supposing that pressure on the brain must be the cause of these symptoms, I questioned the parties whether he had been ill-used, or had fallen; but was assured that he had not received any injury; that he was always a remarkable quiet colt, but had been noticed to be dull when in the pasture, not playing about like most other colts, and had not thriven so well as he ought to have done. Not being able to find any probable cause for this, I felt satisfied that nothing could be effected by medical treatment: but, being so young, the proprietor wished me to try something. I bled him, and gave a mild cathartic; ordering him to be kept in a loose box, and have plenty of hay, bran, and water.

I saw him on the following day. The physic was operating, but there being no power in the rectum to void the fæces naturally, they ran from him down his tail and legs as he moved about. The staggering gait and difficulty of gathering his food was increased; the mouth was not so hot; pulse forty-five, and soft. A fever ball was given to him, and repeated on each of the next three days. A strong blister was applied to the top of the head.

I saw him again on Saturday, when he was much worse. Not being able to get any food beyond his lips, I forced a small quantity of it on to his grinders, but he was now unable to masticate it, and let it fall again from his mouth. When let out into the yard, where a stack of hay was standing, he ran with his mouth open and seized and pulled some of it out, but it immediately fell from his lips. He continued in this state till Thursday the 25th, when he was destroyed, having become a mere

skeleton. On careful examination of the brain with a neighbouring surgeon, who kindly lent me his assistance, the following morbid appearances presented themselves:—Upon the removal of the cranial bones the dura-mater appeared perfectly healthy, so did the substance of the brain; but upon slicing it away to the left lateral ventricle, a small quantity of fluid and lymph were found. The plexus choroides was rather enlarged, and there were seen a quantity of fluid, and a small tumour the size of half a small bean, and about that shape, of a dirty brown colour, and of a moderately firm consistence. The brain, just where the olfactory nerves are given off, was of a very soft pulpy consistence; but nothing else was found to account for the disease and its fatal termination.

SHAKESPEARE—A FOXHUNTER.

By a Hunting Vet.

So, gentlemen, a very clever and amusing writer in the "New Sporting Magazine," under the assumed name of Paddy Blake, has endeavoured to prove our immortal bard to have been. The adventure in Sir Thomas Lucy's park, which compelled him to leave Stratford, he properly considers as one of the wild pranks of youth, and into which an innate love of mischief and danger, but no idea of plunder or gain, had led him: but he maintains that, previous to this, he was and must have been a fox-hunter.

His proof is merely presumptive; but I confess that it is strong, and, in my mind, conclusive. He refers to one of Shakespeare's minor poems, "Venus and Adonis," and he quotes a description of the wiles of the hare, which I fear you may not insert, from want of space, and because it does not quite come within the scope of your work; and yet I will answer, that no reader will find fault.

> But if thou needs will hunt, be ruled by me.
> Uncouple at the timorous flying hare;
> Or at the fox which lives by subtlety;
> Or at the roe, which no encounter dare.
> Pursue these fearful creatures o'er the downs,
> And on thy *well-breathed* horse keep with thy hounds.
>
> And when thou hast on foot the purblind hare,
> Mark the poor wretch; to overshoot his troubles,
> How he outruns the wind, and with what care
> He cranks and crosses with a thousand doubles.
> The many musits through the which he goes
> Are like a labyrinth t'amaze his foes.

Sometimes he runs among the flock of sheep,
To make the cunning hounds mistake their smell;
And sometimes where earth-delving conies keep,
To stop the loud pursuers in their yell;
And sometimes sorteth with a herd of deer:
Danger deviseth shifts, wit waits on fear.

For there his smell with others being mingled,
The hot-scent snuffing hounds are driven to doubt,
Ceasing their clamorous cry, till they have singled,
With much ado, the cold fault clearly out;
Then do they spend their mouths; echo replies,
As if another chase were in the skies.

By this poor Wat, far off upon a hill,
Stands on his hinder legs with listening ear,
To hearken if his foes pursue him still:
Anon their loud alarums he doth hear;
And now his grief may be compared well
To one sore sick that hears the passing bell.

Then shalt thou see the dew-bedabbled wretch
Turn and return, indenting with the way:
Each envious brier his weary legs doth scratch,
Each shadow makes him stop, each murmur stay;
For misery is trodden on by many,
And, being low, never relieved by any.

I can hardly conceive that any man could write thus who had not witnessed and admired all this again and again.

Now, however, comes the chief evidence. While Adonis is withstanding the solicitations of the goddess, his horse espies a filly at a little distance.

Imperiously he leaps, he neighs, he bounds,
And now his woven girths he breaks asunder;
The solid earth with his hard hoof he wounds,
Whose hollow womb resounds like heaven's thunder.
The iron bit he crushes 'tween his teeth,
Controlling what he was controlled with.

His ears up-pricked, his braided hanging mane
Upon his compassed crest now stands on end;
His nostrils drink the air, and forth again,
As from a furnace vapours doth he send:
His eye, which glistens scornfully like fire,
Shews his hot courage and his high desire.

Sometimes he trots, as if he told the steps,
With gentle modesty, and modest pride:
Anon he rears upright, curvets and leaps,
As who should say, lo! thus my strength is tried:
And thus do I to captivate the eye
Of the fair breeder that is standing by.

What recketh he his rider's angry stir,
His flattering *holla*, or his *stand I say?*
What cares he now for curb, or pricking spur?
For rich caparisons or trappings gay?
He sees his love, and nothing else he sees,
For nothing else with his proud sight agrees.

Look! when a painter would surpass the life
In limning out a well-proportioned steed,
His art, with nature's workmanship at strife,
As if the dead the living should exceed:
So did this horse excel a common one
In shape, in courage, colour, pace, and bone.

Round hoofed, short jointed, fetlocks shag and long,
Broad breast, full eyes, small head, and nostril wide,
High crest, short ears, straight legs and passing strong,
Thin mane, thick tail, broad buttock, tender hide.
Look what a horse should have, he did not lack
Save a proud rider on so proud a back.

Sometimes he scuds far off, and there he stares,
Anon he starts at stirring of a feather:
To bid the wind abase, he now prepares,
And if he run or fly, they know not whether.
For through his mane and tail the high wind sings,
Fanning the hairs, which heave like feathered wings.

Paddy Blake says, and I perfectly agree with him, that he "questions whether so much poetry and truth are to be found in any modern book of poems, as are contained in these few lines; and, besides, there is a reality, an enthusiasm, a *vrai-semblance* about them, which no man but a real hunting horseman could have imparted."

As for me, I shall love the bard of Avon the more on account of this new light in which he appears, and devote to him a few more of my two-minute snatches from professional business, or his and my choicest pleasures; and I hope that you will unstarch a little ('twou'd do you no harm if you oftener do it), and admit this scrawl. Let Mr. Paddy, however, have all the credit of the thing—he has my thanks; and you know what I think of and feel towards you.

A Hunting Vet.

A DISSERTATION ON THE EPIDEMIC CHOLERA.

PART II.

By Bracy Clark, *F.R.S., Member of the Royal Institute of France.*

In the preceding part, or memoir, I endeavoured to consider the true origin and nature of this disease, and why, at times, it assumed such a very sudden and fatal termination, viz. from the

undigested mass acquiring a poisonous character. This also would explain the cause of the furious riots in Paris and St. Petersburgh on the first breaking out of the epidemic, the populace conceiving that they were poisoned by the doctors, and also by the vintners, many of whom nearly lost their lives through this suspicion.

And we also endeavoured to explain why, at other times, as in the more protracted cases, without actually destroying the patient at once, it produced effects on the nervous system, such as gave to it very much the appearance of a low nervous fever, or typhus. To these remarks were added what we conceived to be the genuine principles for its treatment, by recalling, by every possible means combined, the restoration of the impaired or lost digestive and chylopoietic functions.

In the present memoir, it is proposed to inquire into the antiquity and original signification of the term *cholera*, and to examine the views and opinions of those physicians who followed immediately after the ancients, and from whom we have principally derived our present erroneous views of the disease, and then those of our modern physicians, and to conclude by giving to the disease a new name and arrangement in the medical system.

Desirous of ascertaining more exactly the origin of the term *cholera* among the ancients, and the sense in which they employed it, and how these erroneous notions of the bilious nature of this complaint first originated, I was led, in order to pursue these researches, to avail myself of the two noble medical libraries in Lincoln's-inn-fields, that of the College of Surgeons, and that of the Medico-Chirurgical Society; and I acknowledge with pleasure my having received the most polite attention and satisfactory aid from the two respective librarians having the care of these valuable collections.

As far back as Hippocrates, the word cholera is found: it several times occurring in his works, and always standing by itself, and without the modern adjunct of *morbus* attached to it. It is, therefore, of very remote antiquity; but in his descriptions of the disease he does not appear particularly to refer it to a bilious origin, neither does he appear to have ever seen it in the character of a terrible epidemic, such as it has appeared of late years in India and in Europe.

Before Hippocrates, however, Erasistratus describes the disorder, and without appearing particularly to insist on its bilious origin or character.

But the word cholera is to be found long antecedent to both the above writers, and at a period nearly coeval with the earliest

graphic records. It occurs several times in the original Hebrew of the sacred writings, and as early as the books of the Pentateuch of Moses. In the Hebrew, the word is often divided into two, חלי *choli* and ר *ra;* sometimes, however, united. According to the Hebraists, *choli* simply signifies illness, sickness, inflictive disease, or plague, without any reference to, or as being in any manner derived from, bile in particular. They inform us also, that the additional *ra* signifies that the said infliction or disease was in an excessive or superlative degree. We subjoin the references to all those passages where the term is said to be found, as well in the writings of Moses as in the other parts of the scriptures, that any one more deeply versed in the study of Hebrew than we profess to be, may have the opportunity of fully considering the true meaning and sense in which they have been employed. These passages, we ought also in justice to state, appear to have been first collected and observed by a gentleman of the Cambridge University, E. H. Smith, Esq. Deut. xxviii, ver. 59; vii, 15; 2 Chron. xxi, 15; 1 Kings xvii, 17; and others.

Here it is pretty clear and evident, that in this very ancient use of the term *choli,* it had no relation to the liver or any of its secretions, but did merely indicate a dire disease or infliction. And may it be otherwise than fair to conclude, that as Moses was said to be "skilled in all the learning of the Egyptians," and was an Egyptian by birth, that he derived the very term from this extraordinary people? and is it not also as fair to conclude, that the Greeks obtained it from the very same source, or rather from the Hebrews, and for reasons we shall see hereafter?

For it may be worthy of remark, as a singular fact, that two words so nearly allied as the Hebrew *choli* and the Greek χολη, in which, in pronunciation, there is hardly a difference, should have had such very different significations, when used by two neighbouring states or nations; and that one should signify disease only, whilst the other should signify bile only, since the Greeks appear to have had no other phrase for this secretion. It is, therefore, but reasonable to conclude, that this would give them a bias towards considering it a bilious disease, not easy to disembarrass themselves of, and in a still greater degree would be this bias in those who consulted the Greek physicians, and learnt their language and their arts exteriorly; and such, we shall see, has been the general bias of nearly all European physician.

The additional *ra* alone serves to distinguish this term from the expression for bile, χολη, and as *ra* would signify nothing in

the Greek, if so added, but is of powerful effect in the Hebrew, it must be clear that it is of Hebrew or Egyptian origin.

We shall now see these remarks in a singular manner verified, on referring to Celsus, who followed those early Greek physicians above noticed, at no very distant period; and here we find him ascribing to cholera directly a bilious origin; and supporting the opinion, apparently, by his own observations on the disease. I cannot any where find, however, the quotation of Dr. Mason Good, who tells us that Celsus derived cholera from χολη, *bile*, and ρεω, *to flow*, for no such derivation occurs with him: Celsus probably knew better. This is another instance of false quotation, shewing how necessary it is to examine quotations, and not to take them on trust; for this passage has been lately often repeated by others. The real words of Celsus are well worth remarking, and are as follow:—" *Nam simul et dejectio, et vomitus est; præterque hæc, inflatio est, intestina torquentur, bilis supra infraque erumpit, primum aquæ similis, deinde ut in ea recens caro lota esse videatur, interdum alba, nonnunquam nigra, vel varia. Ergó eo nomine morbum nunc* χολέραν, *Græci nominantur.*" Celsus, lib. 4, c. xi.

Here we see that Celsus fully falls into the idea of a dreadfully bilious disease; and, to confirm his apprehensions, this excellent man is led to imagine that the bile can assume nearly all colours and forms, and as being " sometimes limpid as water, sometimes in lumps like parboiled bits of flesh, sometimes white, and sometimes black, or various." In the cure, however, he recommends warm water, as we do, but seems to defer spices and wines till towards the conclusion of the disorder!

The physicians, after the time of Celsus, following his example, more and more embraced, almost invariably, the notion of a bilious origin to this complaint, and not from a suppression, which is generally the fact, but from a redundance of the bile. Yet very numerous accurately-conducted dissections of late have convincingly proved the contrary to be the case, by the fulness of the gall-bladder itself, and from the dark colour of the retained bile. Hence I was led, in an early part of my former communication, to say, that either the disease was wrongly referred to, or the name of it, implying bile, or as of bilious origin, was a misnomer; and such proves now to be the fact, and we must go back to the simple Hebrew sense of the word to justify the name at all.

It is, however, possible that a very contrary state, viz., a suppression of the bile, may so derange the health as to render a person more obnoxious to the disease, or predispose him to receive it; though even then the disease must be proximately or

primarily induced by certain conditions of the stomach, as to food and of the atmosphere, as to chill or damp, fully to induce the access. For that cannot, at least in any proper sense of the term, be called a bilious disease, where this secretion, instead of abounding, is deficient or rendered difficult. In what sense the ancient Egyptians employed the term it would be now hard to discover; but it is fair to conjecture, perhaps, in the same simple sense that we find it with the Hebrews—as a pestilence of whose origin they knew nothing.

Having, in some degree, corrected the terms used, and estimated their proper value, we may now more safely venture to consider, and more usefully also, some of the less ancient writings of physicians upon this complaint, and from these pass to the modern writers, proposing a new name afterwards, more expressive of the nature of the disease.

Before, however, I quit this part of the subject, I could desire just to remark, that during my stay in Germany, about two years ago, and with this complaint raging all around me, I observed that the Germans pronounced the word cholera very differently to what we do in England, pronouncing the *e* long, *cholēra*, instead of short, as we do, *cholĕra*. Whether it may serve to guide us I do not undertake to determine, but the Greeks certainly spelt it with an eta (η) or *e* long; and I should therefore be led to believe this ought to be the normal pronunciation of it, and that it was so pronounced by the Eastern nations, from whom the Germans are more likely, from their actual locality, to have received it, than ourselves. It is singular, however, and worthy of notice, that in the foregoing quotation from Celsus, we see it spelt with an epsilon gravely accented, and not as we find it in the Greek writers generally written, which may perhaps be explained from the frequent transcriptions by the Romans, and by scribes who knew not Greek, and had no letter in their alphabet corresponding to the eta or *e* long.

Encouraged by the opportunity these splendid libraries afforded me, I thought it well also just to examine respecting the opinions of some of those physicians who succeeded at some distance those ancients we have lately spoken of. *Alexander Trallianus* was one of these, and appears to have lived about the reign of the Emperor Julian, the Apostate, and was by birth a Syrian, writing in his native tongue; his works were translated into Greek, and afterwards published with a Latin version, by the industrious Germans at Andernach. He appears to have regarded the diarrhœa, which sometimes attended this complaint, as not particularly proceeding from bilious discharges; and he appears also to have entertained very just views of the complaint itself,

ascribing it to indigestion and to chills, and recommending warm clothing and warm spicy medicaments; hence his practice must have been eminently successful. Neither does he make much mention of bile in it: in one part, indeed, its presence in the organs of digestion is expressly denied by him. (*Edit. Andernachiæ Rhenensis*, lib. vii, cap. 14.)

Cœlius Aurelianus, De Acutis Morbis, lib. iii, cap. 19, is under great difficulties as to the origin of the word cholera, but throws no new light upon the subject, and most fully supposes it the consequence of a redundance of the bile; and all his reasonings are full of those imaginations which such a doctrine naturally leads to, and are hardly worthy of a repetition here.

Aræteus, De Morbis Acutis, lib. ii, cap. 6. His treatment and views are evidently confused, and without any clear conception of the nature of the malady, or of what he ought to do with it. What there is of good in his book is evidently copied from the writings of Celsus, of which it is very much a commentary. He is full of the notion of a redundant bile, and of the necessity of its evacuation.

Exactly at what period of time the word *morbus* became first added to this disease I am not aware, or wherefore it was done, as it appears to be gratuitous and unnecessary. It was, perhaps, added under the pretence of separating this disease from those affections of the mind termed *choler,* or *choleric,* angry passions or temperaments, or of distinguishing it from the mental affections which the Greeks termed *melan choli.* Whatever the motive may have been, the addition certainly gave it a more sounding and terrific effect, and especially when attached to one of the most awfully sudden and fatal of human maladies; and the Latins, in translating melancholi by *atrabiliaris,* thus made it wholly a bilious disease, and left it in no equivocal sense but as originating in black bile.

The first use of this expletive addition that I noticed in the course of these researches was found in the Latin translation of Avicenna, the Arabian physician, printed at Venice in the year 1607, though it is possible its use might have been introduced still earlier. There is not much in Avicenna upon this disease that is at all satisfactory; it is but a rambling sort of copy from the Greek and Latin physicians.

I am now led to open the volumes of some of our more modern and recent writers upon this subject, as it will afford me, without much prefatory detail, the opportunity of introducing some novel views on this subject, which I have some time entertained, and which respect the nature and also the proper classing of this complaint, and so introduced will remove the necessity of a more lengthened disquisition in explaining those opinions.

As standing among the first in erudition and comprehensive views, appears the work of my late esteemed and early friend, Dr. Thomas Young, whose premature loss all true lovers of science must sincerely deplore; he has, however, left behind him an imperishable monument of his acuteness, learning, and perseverance, in first opening the long-closed door of Egyptian literature by his unwearied labours with the triglyph stone, a very precious relic still seen among the rare treasures of our national museum. On this stone he first learnt to decipher the symbolical acrostic manner of writing, and of inscription, used by this ancient and wonderful people.

In that astonishing collection of nosologic matter, his *Medical Literature*, p. 287, Dr. Young has noticed this singular disorder the *cholera morbus*, as he also terms it; and, prepossessed with the general feeling arising from the Greek name of it, and of the great medical authorities in respect to it, he fails not to apprehend it to be a disease of entirely bilious origin and character. And, perhaps, in endeavouring to reduce it to some given place in his general system of diseases, he not impossibly felt a little embarrassment where to arrange, and how to dispose of, this three-legged monster of a disease, or under which of his genera he should particularly place it. Having for its characters a triple share, viz., vomiting, purging, and tormina. And I may also confess that I remember to have had myself formerly, in early life, an indescribable feeling of horror and confusion left in my mind after reading, in medical works, a description of this complaint. Whether such might have been his feelings or not, when he was measuring this disease for its place in his system, I do not undertake to determine; but however this might be, he at length makes his choice, and unfortunately fixes upon the purging character of it, which leads him to place it immediately under the genus or order of *Diarrhœa*. It was evidently necessary to fix it somewhere, as it must inevitably belong to one of the three, and could not with any propriety, as we shall see hereafter, constitute a class or proper genus of itself.

His choice, however, was unfortunate, inasmuch as we have already seen that the diarrhœa is not present in well-marked cases of this disease; and even when it is, it is not by any means the leading character of it, nor of any very fatal or destructive tendency; but is, indeed, almost as frequently absent as present, and therefore could in no respect be entitled to so predominant a distinction as that of being the essential or leading character of the disease.

Had he made his election upon the tormina, or strophic character or symptom of the disorder, it would have brought out a

very different issue in his arrangement, and in all probability would, after due consideration, have led him to have settled it among the species of the genus *Colica*, and, from its destructive character, to have given it a very prominent and foremost situation in this painful and fatal group or family of diseases, where, we are confident, it will ultimately be bestowed, and be found truly to belong. For it is now most evident, that it is no proper choleous or bilious affection, such at least as the imagined Greek term cholera has generally served to convey a notion of, but a real cholic, with, in general, a suppression, more or less complete, of this salutary function of the bile. This position for it will, we believe, greatly facilitate and tend to simplify all our views and apprehensions about it, and likewise its treatment, opening a way also to the fully appreciating the various descriptions and doctrines of its treatment which have, from an almost innumerable host of authors, been given and proposed for it as for an incomprehensible kind of disorder.

As to the vomiting, or third head of this Cerberus of a malady, it would appear to be no other than the mere natural effort of the stomach to throw off those contents which it finds an inability or want of power to act upon and digest. Sometimes, indeed often, whether owing to mere debility and want of efficient force in the organ itself, the disease, unrelieved, goes its course afterwards in spite of these efforts: at other times they prove an effectual relief, and were encouraged on this account by many eminent practitioners, particularly Sydenham. And where it is ascertained, which should be particularly inquired into, that the patient has eaten of stale pork, shell fish, hard mutton, certain fruits, or any of those things which undigested exhibit poisonous properties, as we have formerly stated, it is, perhaps, in these cases to be encouraged by artificial means, especially if the quantity taken be such as the use of stimuli may be long in procuring the digestion of, otherwise the latter course would perhaps be safest, in a general way, to rely upon; many substances being perfectly inert when fully digested, which are rank poisons otherwise, destroying the patient through their effects upon the nerves of the stomach, and acting fatally by sympathy upon the brain, and in more protracted cases producing the appearances of a typhoid disease.

Should the human physician deem these views worthy his attention, they will, we believe, go far to explain many circumstances and appearances attending the complaint that were before quite obscure and thought inexplicable. Under these views and impressions we shall now venture to take up some other of the most approved writers on the subject; and first,

with reverential feelings due to so great a character for learning and worth, the justly-admired Sydenham, and we shall see that, guided by his acute practical observation, and that admirable tact which he so eminently possessed, and aided also by the study of the ancients, how very near he came to the true treatment of the disease, though his views upon it were evidently not distinct, but considerably clouded by the prevailing feeling of preceding ages, of its bilious character and a redundant bile. In other respects he describes the disease well, calling it cholera morbus, see Sect. 4, cap. 2, and says, that in his days, that is from the year 1669 to 1674, it made its appearance every year in the autumn season, on the first chills of the declining summer, with as much regularity "as the coming of the cuckoo in the spring, or of the departure in autumn of the swallow." He describes it with its three characters, vomiting, purging, and gripes, and recommends for its treatment, not exactly the warm water of Celsus and Hippocrates*, but something of a more digestible quality—plenty "of warm chicken broth;" it is, in its effects, not very distantly allied to our hot water, which, however, has the advantage, in all situations, of being more quickly attainable. He recommends encouraging the vomiting, and especially on no account to suppress it; and, aware that some cause of offence remained with the stomach, he recommends spear-mint tea also; and also laudanum in the advanced stage of the disease, but expressly forbids its use in the early stage, that it might not repress the vomiting; no doubt finding from experience that it tended to arrest the stomach from performing any of its usual functions, such at least it is fair to conclude would be its effect, and with injurious consequences as to digestion. But towards the latter end, and when in reality the danger was passed, he recommends, as did the ancients, small portions of generous wine. Here, according to our notions, he was somewhat deficient, and in a very bad case would, in all probability, have lost his patient for the want of these stimuli being more early applied; but washing the stomach out, instead of digesting its contents, may suffice sometimes in mild cases and in feeble attacks of the disorder, and hence the proceeding by emetic will often be found to have succeeded, as may be seen from the history of very many cases where the mustard emetics were employed, which were much used in England at the commencement of the appearance of the epidemic, but were discontinued afterwards, from finding, perhaps, that they had often failed.

* Who appears to have taken it from Erasistratus, Lib. 2, as quoted by *Cœlius Aurelianus*, p. 262—"Salutarium utatur tepido potu vomitum provocans vel acrimoniam temperans fellis."

For if we view the indication for cure rightly, "it is the return of the digestive and chylopoietic functions" that can alone ensure the safety of the patient.

And, in the course of our perusing later writers on this epidemic, both French and English, it was singular to observe, how frequently they relieved partially, and even at times wholly cured, their patients, by stimulants opportunely exhibited; yet from their feeble manner of doing it, and in doubting and want of faith in what they were doing, instead of persevering, they often left them, in pursuing other measures, miserably to perish; not following up the treatment with the suitable auxiliaries in aid of the remedy: and what was most unfortunate, they afterwards drew conclusions unfavourable to the practice, and forbad their use as prejudicial and injurious, trusting afterwards often to the frail aid of mercurials, opium, bleeding, saline slops, venous injections, and other worse propositions.

At other times, again, were these strong stimuli applied naked, if I may be allowed the term, and with nothing given along with them, to qualify and aid their operation, and therefore with injurious effects; for pure brandy in itself, and alone, is certainly no digester of food, quite the contrary; but where it acts well it is aided by combining with the mass of matter already in the stomach, or with fluids given along with it: it then does so, by calling forth the powers of the stomach to throw out its juices and to perform those actions which are necessary to the digestive function; but where it was so circumstanced as not to produce these effects, it would be likely to do harm and be mischievous; or when not supported by the aid of warm demulcent fluids, or aided in every other way that could remove the operation of the paralyzing cause, it would get into discredit also. The placing the contents of the stomach favourably, in order to digestion, and the whole system also, should first, we humbly apprehend, obtain our care and attention, and then the stimuli administered will generally have the desired result; one measure co-operating with another, encouraging and aiding their effects by frictions and mechanical measures, not applied to the legs on account of the cramps, but to the abdomen itself and stomach, the seat of the mischief. Diluting also the spirit, and facilitating its digestion by easily digestible things given along with it, and aiding it, if there be occasion, by warm spices and other stimuli; encouraging also, by tepid measures, all the organs concerned, and even the extremities of the body, all which circumstances are required in very bad cases. Milder cases will yield to very simple measures, such as friction, and warmth even alone, applied to the region of the stomach.

But if the case be only partially relieved, and these aids are

but imperfectly administered, then a protracted case will be the issue, accompanied with those apparently anomalous effects upon the brain and nervous system which often, or generally, end fatally. So that the perfect resuscitation of these offices is indispensably necessary for the accomplishment of the restoration of the sufferer: and we may also see, on this taking place, a return of the most perfect health; that is, if the case has not been of the severest, and its removal has been speedily accomplished, and without much delay, as we might prove in the history of hundreds of cases, which shews most plainly that there can be neither contagion nor any thing fatally depressing about the disorder, even hardly a moment longer than its actual invasion; so that the very same day, or the next day, the patient can return to his usual occupations, of which there is no example, I believe, after an attack of one of those diseases which are by practitioners generally admitted to be really and truly of a contagious character.

Sydenham recommends also gum arabic and barley-water, with a view, apparently, to sheath and protect the coats of the stomach and bowels from the acrimony of the supposed bilious discharges. And we have thought, if to our hot water were added a little farina of some kind, as flour, starch, oatmeal, or arrow-root, if at hand, it would more readily lead on to the commencement of the digestive process, than mere water, but not at all given with any view to sheath the mucous membranes from supposed bile or acrimony of any kind. A gentle stimulation with spices might also be not incongruously added to these farinaceous liquids; as Kyan or white pepper, especially if stale pork, conger, shell-fish, such as muscles, or unripe melon, has been the offending article.

Having thus copiously remarked on the works of this valuable writer, and as most of the other writers of eminence have generally drawn from him and partaken largely of his views, so we shall not proceed to a further consideration of them, but in respect to a more suitable name for it, and a more appropriate locality in the general system of medicine; submitting, with all due deference, what we have to say on this head to the correction of abler heads and more practised hands than ours, for the devising something better; hoping that every attempt, however feeble, that leads to another attempt, may be thought a step and an advancement.

If, in following our suggestion, we may be permitted to place it along with its proper family, as we believe it to be, of the *Colicæ*, we should next propose to inscribe it, for its specific name, with the term *tridolor*, in allusion, as the reader will perceive, to its three distressing accompaniments, vomiting, diarrhœa,

and tormina. And, as this proposition may be objected to, from the name Colica being subject to some ambiguity, as leading to the apprehension that it was the colon that was chiefly the seat of the disorder, which would not be true; for although this large intestine may at times chill, and become the first organ of the arrested function, yet is the stomach as often, or indeed much oftener, the first part affected; so that, to do away all ambiguity, if such might be thought desirable, we should propose to unite the two genera into one, that is, *Cholera* and *Colica*, under a new name, and in order to remove any possible misnomer, inscribe it with the name *Strophos*, the Greek appellation for the tormina, and which, perhaps, always present, attending all the species of the genus, thus making the griping or tormina the essential and leading character of this large family.

And if, after giving it this more natural arrangement, we might be allowed to give it a specific name also, indicative of its dangerous character, we should, if it be not thought inappropriate, or till some better shall be devised, propose to give to it, that it may also serve as a timely warning of the fatal consequences of its invasion if neglected, the epithet *Tetralge*, or *the four misery disease*, from τετρα, *quatuor*, and αλγη, *dolor;* conjoining to the three above enumerated affections, a fourth, viz. the wretched cramps and spasms of the legs and abdominal muscles, which so frequently, but not invariably, attend the disease: and thus constituted and titled, it may be said to be somewhat as the candid rattlesnake, always carrying about with it its salutary warning. Such is, however, merely a proposition for adoption or rejection, as may be judged right in a system of medicine. The public will ever, probably, continue to call it by the dread name of cholera morbus, though ambiguous and wrong as to its signification as now used. For names are of no mean importance in leading our views and opinions; and the nearer these approach or approximate to the truth, the danger of error will be the more diminished, and the facility of forming just reasonings and conclusions be augmented. The catalogue of the genera of human diseases will be also diminished by the measure we have proposed, by the removal of one of its most obscure genera, which cannot but facilitate the labours of the rising generation of physicians in acquiring their art.

Arrived at this point of the subject, and furnished with the preceding data, we may now profitably turn our attention for a moment to the consideration of one of the latest and most popular, as well as most generally read and used, of the medical works of the present day—that of Dr. Mason Good, entitled *Studies of Medicine.* At vol. i, p. 248, we have his views of this

complaint, and, like a redoubtable systematist, he commences with taking the genus *Cholera*, and dividing it into three species —the *biliosa*, the *flatulenta*, and the *spasmodica*. In describing the first of these, the *biliosa*, he falls fully and without reserve into all the vague notions about the bilious character of the complaint, as, indeed, the name he has chosen for his first species implies; and under this apprehended species, he enters the one half of the dire history of this terrible complaint, reserving the other moiety of its hosts of slain as an offering to his third species, the *spasmodica*, which are all most evidently but one and the same complaint, the spasms or cramps of the legs and abdomen accompanying the disorder (as he himself, indeed, inadvertently admits) in both species; and it is to be remarked, that these spasmodic affections do accompany the complaint most severely where there is considerable or excessive vomiting attending it.

As to his second species, *flatulenta*, it is evidently, at least as we believe, no other than an anomalous case of wind colic, drawn in to fill up and make out a respectable family list of species. This serves to bring to our recollection, as suiting the present place, what we had before purposely omitted to mention, the *cholera*, ξηρα, of Hippocrates, or *cholera sicca*, of his translators, or dry cholera; which, apparently in compliment, as it were, to the great father of medicine, Hippocrates, Sydenham also makes mention of, but afterwards adds, that he never saw but one case of it, so that the existence of any real, essentially-specific disease, may be fairly doubted: and may not such a case be easily explained, by a view of those cases of common cholera which are attended with no previous diarrhœa, and which would be necessarily a puzzle to those who were fully possessed of the notion of the bilious origin of this complaint, from whence they apprehended the purging sprung, and which to them would give it all the appearance of another and different disease? It would appear either to have been this, or some anomalous case of dyspeptic colic, reducible to no certain rule or character. And as to flatulence, or wind, it accompanies all kinds of imperfectly-arrested digestion, especially where the powers are strong to resist the access of the full character of the disease in a perfect suppression. And that such flatulence does generally occur, we may prove by reference to the description of Celsus, and innumerable cases recorded during the late epidemic; so that surely it cannot constitute with propriety a specifically-different disease.

There is one remark, I find, with Dr. Good, which appears to deserve a more particular attention here, and which seems to be well founded on fact, viz., that powerful impressions upon the

sensorium, especially of a nature to excite grief, or any sudden alarm or fright, will sometimes have the effect of bringing on an attack of this complaint; and if such be admitted, it will go some way in explaining a considerable number of those cases of cholera, where the evidence of contagion appeared all but decisive. Instances of relations and friends falling immediately one after another, as though they had certainly communicated it to each other, gave to it the indelible impression of an infectious disease: being seized in the presence of their friends, or dying before them, so filled them with fear and apprehension, and took such possession of their minds, that they became, in consequence (other things, perhaps, at the time conspiring, as similarity of food, and similar exposure to atmospheric impressions), obnoxious to the disease, from a suspension of the proper functions of the nerves leading to the parts, which, losing their influence over the digestive organs in particular, would induce the attack; so that nothing, under such circumstances, could shake the belief of the spectators that such were true cases of contagion. In the *Philosophical Transactions* for 1667, there is related a case, with every appearance of truth, where a terrible loud clap of thunder appeared immediately to have the effect of bringing on the disorder; and I think, in the course of perusing some of the more ancient writers on this disease, I have also seen recorded testimonies of its invasion from similar causes.

Dr. Mason Good seems very much to depend upon opium with tonics, as Calumbo root, in his treatment of the disease, given very much after the manner of Sydenham. As to the probable effect of opium we have already delivered our sentiments.

That dampness and chills, and not contagion, led to the complaint, is also strongly corroborated by a remark of Gendrin, p. 312, "*Le plus grand nombre ont été atteintes pendant la nuit,*" *&c.;* and Bouillaud also informs us that smaller colicky affections of the stomach and bowels preceded for several weeks the grand attack of the disease in Paris, so that the acting cause came on gradually; which would also appear to confirm our opinion of the nature of it, and to remove the idea of any specific contagion. These smaller affections were called by the French physicians, by way of distinction, the *Cholerine* (Traité du Cholera Morbus, p. 191.)

If further proof were necessary, we may have the most unquestionable of the propriety and advantages of the stimulant plan of treating this disease by reference to the writings of Dr. Burrel, (vide *Bombay Reports,* p. 68-80), who states, that the bile sometimes flows during this complaint; which affords us the opportunity of saying, that neither its suppression nor its flow is

a necessary or invariable character in the disorder, but that either may happen according to the individual case; still a suppression is the more usual condition, from the cause we have formerly stated, viz., that that which arrests digestion will probably also have a tendency to arrest the flow of bile. And also from the works of Dr. Orton on *Indian Cholera*, 2 vols., Madras, 1820, and since edited in London. Also from the writings of Frederick Corbyn, an eminent surgeon in the Company's establishment in India, and a considerable number of his medical associates, in an excellent communication to Sir Gilbert Blane, inserted in the *Medico-Chirurgical Transactions*, vol. ii, p. 110. On turning to the writings of Dr. Cullen, we see that he gives a most woful description of the highly-bilious nature of this complaint, and that "the bile is acting both upwards and downwards," &c. As to his treatment, it is chiefly derived from Sydenham.

And now, in conclusion, may I presume to state that this stimulant plan of treatment was strongly urged by me, and with all the combined agents necessary to render it successful in the treatment of horses, as far back as 1804-5; and of which I ascertained and gave a full account to the public in a dissertation printed in London, in 1815, where many interesting particulars and remarks may be seen, not here introduced? And may I not also state, that, from having contemplated the disease in the simple form in which it appears in the horse, I was led to extricate it from its so generally imagined bilious origin; and by comparing and transferring those observations to the human body, was led to see also that the bile had hardly more to do with the disease in the one case than it had in the other?

Having brought to a conclusion my observations on this perplexing malady, in token of long friendship and sincere regard, I now inscribe them to my very worthy and learned friend, Dr. Hodgkin.

Taunton-place, Regent's-park,
6 mo. 1st, 1833.

Although retaining our former doubts as to the analogy which Mr. Bracy Clark imagines to exist between cholic in the horse and cholera in the human being, we have very great pleasure in inserting this second dissertation. We proudly recognize the accomplished classical scholar, and one of the ornaments of the veterinary profession; and we can assure him that, if he would mingle more with his brethren, *as friend meets friend*, he would experience a cordial reception, and find that he was not undervalued by them.—Ed.

A CASE OF PROFESSIONAL IGNORANCE.

By a Looker-on.

I am induced by an ardent love for the veterinary profession and anxiety for its welfare to send you the following case: one amongst the many which tend to convince us of the profound ignorance of those pretenders we daily meet with in country towns, who, without professional, or, indeed, any other education than a blacksmith's shop affords, designate themselves veterinary surgeons, alias farriers :—

Mr. B., a respectable farmer in Shropshire, had a valuable waggon horse, for which he refused £40, lame in one of his hind legs, and which, from improper treatment, became so crooked that the animal could not put his heel to the ground. This crippled state rendered him utterly useless, and he was ordered to be taken to the kennel. While, however, he was on the road to his last destination, he was overtaken by a gentleman, who questioned the servant leading him respecting the nature of the lameness, and desired him, as he passed through Salop, to call and shew the horse to Mr. Hickman, and some other veterinary practitioner in that town. Mr. Hickman was from home, and the other gentleman declined having any thing to do with him, being of opinion, from the cursory examination which he could then make, that no application or treatment could be useful. The man again started to deliver up the poor animal to the hounds; but, as he was passing along Raven Street, Mr. H. Crowe, V.S., happened to meet him, who, after examining the leg, and inquiring what scientific vet. had been attending him, bought the horse for a sovereign. In a few days afterwards he divided the two flexor tendons in the way described by Professor Dick, of Edinburgh; and succeeded in bringing the leg perfectly straight. The horse immediately put his heel to the ground; in three weeks he was quite upright; and, in a very short time, will be as efficient as ever. Mr. Crowe has refused twenty sovereigns for his bargain.

I must now tell you, gentlemen, this horse was attended fifteen months by a farrier in Shrewsbury, who has the presumption to assume the name of veterinary surgeon. It must be evident to every one, that this man must either have been incapable of performing the above operation, or is totally ignorant of its result; otherwise he would not have suffered an old patient to have passed his door a complete cripple, and to return in a few

weeks from a near neighbour a sound horse. But so much for home-bred science!

If ignorance be bliss, &c. &c.

I am, gentlemen, your obedient servant,

A LOOKER-ON.

THE VETERINARIAN, DECEMBER 1, 1833.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE last was a busy month among veterinary teachers and pupils. On the 15th, Mr. Dick commenced his winter course; and to a class which, by its increased numbers and respectability, gave him promise of no distant reward for the zeal he evinced in the erection of his noble establishment in Clyde Street.

On the 18th, in the morning, Mr. Coleman delivered his introductory lecture. The theatre was, as usual, crowded by his present class and old pupils. He appeared to be in full health and spirits.

On the evening of the same day, Mr. Percivall made his first appearance as a veterinary teacher, and at the University of London. Our readers shall judge of the merit of his first essay, for his lecture will enrich the next number. I will only say, that I congratulate the veterinary public in, at length, having him in a character which he ought long ago to have sustained. He had, however, been previously afflicted with an inflammatory affection of the bronchial passages; and for the removal of which he had obtained a long leave of absence, and has visited another clime. The unaccustomed exertion of speaking for an hour, to a numerous audience, and in a large theatre, produced so much irritation of the bronchial membrane, that he was reluctantly compelled to abandon the attempt at delivering a second lecture. His coadjutor was still too much indisposed to attempt the task, and the lectures were unavoidably suspended.

As some acknowledgment of gratitude, however, to those who would have constituted the class during this session, I beg to say, that I shall be most happy to see them at the private lectures, which will be delivered to my house-pupils, until the duties of the University can be resumed. I beg them to come, for we shall at least be getting on with our subject. This will also include my perpetual pupils. I wish my health would permit me to fix an earlier evening than Friday, December 6th, at five o'clock, at my residence. As soon as he can accomplish it without too great danger, Mr. Percivall will once more rejoin me, and we will try hard to continue both courses to the end.

On the evening of the 19th, Mr. Sewell commenced his course of veterinary surgical lectures, and which are attended by the majority of the students. May the session be propitious to the cause of veterinary science!

We have many subjects on which we wish to address our readers, and on which, indeed, we have received a friendly challenge from some of them. These must form the principal matter of the leading article of the first number of the new year.

Y.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Mr. Youatt's Lectures *on* Farcy *and* Glanders, *as delivered at the University of London, and afterwards published in The Lancet, and The Veterinarian: reviewed by Mr.* R. Vines, *V.S., and Teacher of Anatomy and Physiology at the Royal Veterinary College.*

These Lectures are now public property, at least they are the property of the profession; and, although it has been usual to deal rather leniently with these *vivâ voce* effusions, yet every illustration of their accuracy or their blunders, their worth or their humbuggery, is professional property too: I therefore, with the consent of my brother-editors, present our readers with a portion of this Review, extracted from a pamphlet published by Mr. Vines since our last Number, and entitled, " An Appendix to a

Practical Treatise, &c." I shall add a few notes, quite as copious as, or possibly more so than, the Lectures or the review of them deserve. My notes will be distinguished by figures.—W. Y.

A late[1] lecturer in the Lancet and the Veterinarian still contends "for both Glanders and Farcy being the effect of a poison contained in the blood." Let all those, I say, who are fond of theorizing on these subjects, by all means enjoy their own opinions[2].

As regards the manner in which this poison is admitted into the blood, as also the part which it plays during the time it remains in the circulatory system; let them inform us, "that at one time it is *passive*," and that "at another time it is *very active*[3];"—that at "one time it *rests*, as it were, at the *valves of the absorbents*, and ultimately destroys the surrounding parts by ulceration,"—whilst "at another time it remains *dormant in the system*, as harmless as a dove, in the form *of seeds of disease, only awaiting a favourable opportunity* to produce its most serious effects[4]."

This kind of language, to readers not conversant with the subject, may at the first view appear very plausible; but let not Mr. Youatt again inform those who are practically acquainted with such matters, "that at the *commencement of glanders* we shall find horses in *the most healthy state*, and at the *same time* that *such disease is generated while the animal is living in the most filthy situations*."—How Mr. Youatt can possibly imagine that practical men can be swayed by such logic as this, I cannot understand[5]. He says, "that the stables of the postmaster and

[1] Dele "late". This must have been an error of the printer; no *malus animus* in the author could have introduced such a word, which, if not in its literal yet in its implied sense, is both inappropriate and false.

[2] Does or can any one doubt, that when Glanders, *at first* "*inflammation of the Schneiderian membrane*," is accompanied by cancerous ulcers, a portion of the poison secreted from them is taken up by the absorbents, and "carried into the circulation, and mixes with the blood, and vitiates the blood?" I had imagined that Mr. Coleman's experiment had set this question for ever at rest; but Mr. Vines thinks differently, and designates as "*theory*" the universally received opinion of his professional brethren.

[3] Is not this the character of every animal poison in different stages of the disease, or states of the constitution?

[4] Is not this the case with the poison of variola, rabies, and many others? But shame on you, Mr. Vines! for so sophisticating the latter part of the quotation.

[5] There can be no occasion for me to inform "those who are practically acquainted with these matters", that, in a variety of cases, "at the commencement of glanders, and, occasionally, for a long time afterwards, this local affection of the Schneiderian *does no injury to the general health*;"

the waggon proprietor, and the proprietor of the barge horse, are sometimes too low for an ordinary man to stand upright in, too dark for the accumulation of filth to be observed, too far from the master's eye for the stable-man to do his duty, and where the fumes of the fæces and the urine are continually arising; these, I have said, are the very hotbeds of Glanders, and there it is almost a constant resident." In another part of the same lecture, he states, "that these places are the very domain of Glanders, and that many an inhabitant yields to its influence;" yet "where do we find horses *so hardy, so healthy, so capable*, not only of *ordinary*, but of *cruel exertion?*"

So, gentle reader, if you should wish to furnish yourself with horses possessing the above qualities, these are the places, according to Mr. Youatt's description, in which you are to look for them[6]. The fact is, this gentleman, in his lectures on Glanders, Farcy, &c., from being much *too fond of figurative language,*

and, I should say, that he has little profited by his opportunities for practical observation who entertains a moment's doubt about it. I will tell Mr. Vines that practical men are, now and then, very painfully compelled to "be swayed by logic like this," and that they would regard *his* practical experience with contempt, if he disputed the deductions which such logic enforces. I will also tell him, that "there is no more prolific source of glanders, than low, ill-ventilated filthy stables." Really I am ashamed to hint at these circumstances of every day's occurrence. As for the term *practical*, I will not bandy that any more with Mr. Vines. Two-and-twenty years' employment, even on the scale which some of the Numbers in THE VETERINARIAN of this year exhibit, must have given to the humble writer of these notes no contemptible opportunity for observation. If he has not availed himself of them, and is still a theorist, why it is his own fault!

And as to the ungentlemanly insinuations, in which Mr. Vines indulges himself in almost every page, of "poetical," "ingenious," "figurative language," "hearsay," "contradictory evidence," "practical men," "mystification," "wish to set aside all originality in others," "imaginary positions," "perverse obstinacy," "unfair misrepresentation," "feigning," &c. &c., I regard them with the contempt they deserve, and which they will excite in every honourable mind. The cause of truth can never be benefitted by falsehood and blackguardism.

[6] Really, Mr. Vines, this is unfair; for you well know that my argument went to this extent only—that, for awhile, Glanders was a local disease; and that you would nowhere find horses more hardy, healthy, or capable of exertion, than these barge-horses, *until the constitution became tainted.* For the perfect truth of this I appeal to every one who practises in the neighbourhood of a canal, or who has much to do with waggon or even with farm horses. Mr. Vines may go and purchase horses at these places if he pleases, and I should wish him joy of his bargain; but did he think me so insane as to recommend my friends to go there, when the chances are that the horses they purchased would have the seeds of this disease within them? This is not fair reasoning. There is a literary dishonesty and want of principle about it.

*hearsay, and contradictory evidence**, has, in my opinion, laid himself open to our pathological comments. I shall not make use of any stronger language than this at *present;* but will only further observe, that to tell us, that horses *really can become* glandered, and also exist in such *filthy situations* as those already mentioned, and *that for years,* with *this disease,* and yet without injury to the *general health,* is, in my opinion, an insult to our common understanding.

* In one part of his Lectures (page 195, Veterinarian, 1832), he informs us, that a number of troop horses became glandered from their being improperly admitted into stables that were built at Hythe. Now, Mr. Coleman, who, I believe, is not only a native of that place, but possesses property there also, says, on the contrary, that the horses were put into open sheds only, and that never were horses more healthy; not even one of them during their stay presenting the slightest appearance of this disease[7].

In the same Lecture (still speaking of Glanders), Mr. Youatt says, that "*Fortunately it is not so contagious as mange or distemper, or some other diseases;* if it were, the breed of horses would be *swept away.*" For he says, "that the virus (of a glandered horse) may be received, *without injury, on the very membrane which is the seat of disease.* Horses (he affirms) have been kept week after week, and month after month, in the next stall, and some in the same stall without becoming infected."

Now (in the same Lecture) in direct contradiction to the above, he asserts, "That the truth of the matter then is, that every horse that passes through a fair, or is baited at an inn, or even travels the common public road, may be infected without the rider's or owner's knowledge, or slightest suspicion[8]. A glandered stallion neighed at a mare that was separated from him *by a double hedge, and a deep lane; the virus was wafted across*

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[7] For the account of this my authority was Mr. John Percivall. The truth of the matter probably is, that he and Mr. Coleman referred to different periods, and that both were right.

[8] Has not Mr. Vines's experience told him that I was here relating the history of every contagious disease? There *is* this caprice about them all. Take which you will, there are persons or animals who, in certain states of the constitution, almost bid defiance to contagion; and who, at another time, succumb almost in a moment. Are they facts or are they not, that sound horses may be kept in the same stable with glandered ones, week after week, and month after month, without becoming infected; and that, at other times, one glandered horse being introduced, the disease speedily runs through the whole stable? Is it a fact, that it is often caught, oftener perhaps than elsewhere, at a fair, or in a strange stable? My friend, Mr. W. Percivall, had not had a glandered horse in his regiment since he was appointed to it; but, at the last Marylebone election, the troops were ordered into out-quarters. They were absent only a few days. He has already lost three with glanders. Really Mr. Vines seems to be disposed to shut his eyes to all experience but his own, and to his own, too, where it runs counter to a favourite point. He seems to despise pathological deduction and fact, for the purpose of abusing this poor lecturer. Fair play or foul play, it seems all the same to him; witness the closing paragraph of this note of his, which I shall immediately notice.

It is true that there are some horses, which, when they become glandered or farcied in not only those, but likewise other places, from their natural *strength of constitution*, are capable for a time of performing *ordinary exertion*, and that with benefit to their owners; whilst, on the other hand, there are others, whose system *not being so strong*, fall off immediately, and, of course, the sooner they are destroyed the better. But in neither of these instances do we find the system in *a healthy and natural state.*

Mr. Youatt, in his Lectures on Glanders, advises his pupils "not to puzzle themselves with the distinction betwixt *healthy*

by the wind, and she became diseased, *and died*[9]." This out-Herod's Herod; with the exception of M. Saunier, who asserted that Glanders could be communicated from one horse to another at the distance of fifteen or twenty miles. (Vide p. 163-4, Practical Treatise.)

But the best of the joke is, that when treating on the causes of the Glanders, to our very great surprise, this ingenious author (as Mr. Blaine calls him) introduces to our notice the valuable paper of his friend, Mr. Turner, and attempts to explain, that the same cause which produces the *navicular disease* in the *foot of the horse*, likewise produces Glanders *in the head*[10].

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[9] As to the disease being communicated in a way perfectly unique, I cannot, at the present moment, recollect my authority; but it was one among the numerous and strange facts accumulated in my memory. I will "hark back," and find it if I can, and the public shall then judge of the worth of the authority.

[10] Now for the real fact of this "best of the joke." At the commencement of Lecture IX are the following remarks:—

"*Want of regular exercise.*—This is a frequent although unsuspected predisposing cause of glanders, *as it is of almost every disease to which the horse is subject.* Mr. Turner has well explained this in his valuable account of the navicular disease. He does not attribute the inflammation of the synovial membrane, and consequent injury and disorganization of the joint, to honest wear and tear on the road. It has its real origin in rest. The predisposition for it is engendered in the stable, although it becomes permanently established by violence out of the stable.

"So when a horse is irregularly worked, and more particularly worked with unusual severity, and is become out of spirits and falls away in flesh, a holiday is given him; he stands idle for three or four days or a week; he is then suddenly taken out of the stable, he is put to his former hard work, and, perhaps, the owner attempts to make up a little for lost time: but his muscles have got out of action; it requires a vast deal more exertion of nervous energy, and more actual labour to accomplish his wonted task; and when it is accomplished, and he reaches the stable once more, he hangs his head and refuses to eat, and he is, in fact, in a state of fever. The groom perhaps crams him with cordials; and this state of general fever has a local determination—the weakest goes to the wall, and either the lungs or the feet, or this membrane, almost the weakest part of all, exposed day after day to the stimulating, debilitating influences of which I have spoken in a former lecture—"the membrane of the nose becomes the principal seat of inflammation, which terminates in glanders."

and unhealthy disease;" that " it is a strange and unintelligible connexion of terms[11];" and in this review of my " Practical Treatise," in the Veterinarian, he has very kindly done me the favour, when taking an *extract from page 7, on the General Observations on Glanders and Farcy,*—not only of stopping short in the *middle of a paragraph,* but likewise of *a sentence;* and by so doing he has very cunningly left out the *facts* which are there brought forward in support of my remarks, which he has taken away. And then, in order to serve his own purpose, he has wound up the matter by saying that my observations on those subjects, " barring misappropriation of terms and ambiguity in language, are good sound pathology, the frequent applicability of which cannot for a moment be doubted."—Now, what mortal, previously to the publication of this discovery of Mr. Youatt, could for a moment have supposed it possible that *good and sound pathology* could co-exist with *wrong applications of terms* and *ambiguity in language?* The poor man talks *downright nonsense;* and even if the terms had been misapplied, which I contend is not the case, it was his business, if he had acted the part of an *impartial reviewer,* to have pointed the errors out. This he has not done. No: WHY NOT? Because he well knew there was no error of the kind in the passage animadverted on which he could produce.—And this I now, in return, *defy him to do*[12].

So far it is true that I have attempted " to explain that the same cause which produces the *navicular disease* in the *foot of the horse,* likewise produces glanders *in the head;* and so has and does and so will every practical veterinarian; and so does Mr. Vines himself, and in words so nearly the same, that he appears almost to have borrowed them from me: See page 33 of his Appendix. He was consulted with regard to some job horses, among which glanders had appeared; and he says, " On investigation, it very soon turned out that *the horses had been living for a length of time in idleness,* and with a plentiful allowance of new hay and oats, which of course, when under either work or play, are well known to render horses in a *faint, relaxed, or debilitated state;* and, of course, from the slightest exciting cause being applied, in consequence of their *being then in a predisposed state, they become liable not only to those, but likewise to a variety of other diseases,* which, if they had been subjected to a different mode of treatment, would never have occurred."

Now, what will the reader think of this wilful perversion of meaning—this statement of that which is literally true, but in such a way as to produce a totally opposite impression on the minds of others, and *with the evident intention to do so?* What is this but the *worst species of falsehood! Does Mr. Vines expect to be received, in future, among candid and honourable writers; or will the slightest credence be henceforth given to any representation he may make!!!*

[11] So I did, and so I ever shall, for the terms *healthy* and *unhealthy disease* are to me strange and unintelligible connexions of terms:—*the first is a contradiction; the second mere tautology.*

[12] I was not the reviewer of Mr. Vines's Work on Glanders. I should

have thought that he, and I am sure that our readers will give us the credit of being swayed by some feeling of delicacy about these matters; and that when there is much acquaintance and something like connexion between us and the author of a work, we should employ, if we can, a friend more likely to be impartial. There was some connexion, I thought friendship, between Mr. Vines and myself then; but the mystery is now all out, and the English of this abuse of the poor Lecturer is, that he was rather a severe reviewer. I am, however, as one of the Editors of this Journal, answerable for the spirit and general execution of that article. It is contained in our fourth volume, page 231; and I really do think it was quite as favourable a review as the work merited. Justice was done to the manly and independent style which Mr. Vines assumed; it was confessed that his work had much good stuff in it, and that there was occasional good sound pathology: but the reviewer was not a thick and thin applauder; he spoke of strange ambiguity and misappropriation of terms; he lamented the encumbered and obscured, and complicated and unintelligible arrangement of the work; and he hinted rather broadly at the general and unsatisfactory manner in which Mr. Vines spoke of his boasted specific.

"Hinc illæ lacrymæ!"

But my friend, how will he bear all the dressing which Mr. Vines so lustily lays on? I am used to these things, and they annoy not me. "Poor man!" so says Mr. Vines, "he talks downright nonsense. If the terms were misapplied, he should have pointed the errors out." Why, so he did. He spent two pages about it. Yet Mr. Vines affirms that he has not done so. "He ought to have pointed the errors out," says Mr. Vines. "This he has not done. No. WHY NOT? Because he knew there was no error of the kind in the passage animadverted on which he could produce. And this I now in return *defy him to do.*"—I can only ask our readers to turn to my friend's review, and use their own eyes.

Mr. Vines puts me very much in mind of a great lubberly boy, who, after having been well licked, but not half so much as he deserved, lies roaring or sulky, until his antagonist has put on his jacket, and got a good distance off; and then he bawls after him, "Why don't you come back? You dar'n't strike me again." Sometimes he gets a second dressing, and that to his heart's content; but oftener his conqueror acts the wiser part, and scorns to have any thing more to do with such an opponent.

But my friend has the charity to suppose, that, notwithstanding this wrong application of terms, and ambiguity of language, Mr. Vines's book might and did possess some good sound pathology. What an absurd supposition! what a scandalous thing!—and yet, with all deference to Mr. Vines, I have known persons who could not string together two sentences so as to render themselves intelligible, and who were continually misapplying terms, arising from the want of early education, yet who had tolerably clear notions of some of the fundamental principles of their business or profession. I will suppose a case:—a person shall occasionally write essays, or he shall write a treatise on certain subjects, scarcely two sentences of which are connected together, or, taken separately, intelligible: but these essays, or this treatise, fall into the hands of a friend, who, with ten times more trouble than it would have given him to have composed them from the beginning, throws them into form and order, and makes them interesting and instructive too. Dare I say, that the author of this *rudis, indigestaque moles*, had no good and sound pathology, because it really was not to be discovered until his friend had worked it into the light, and got rid of many more wrong applications of terms, and much more ambiguity of language than remained? No! the dress may be attributed to the friend, but the sterling substance is still the property of the author.

Does Mr. Vines doubt this? Well, then, he shall have his own way, and "good and sound pathology can never eo exist with wrong application of terms, or ambiguity of language;" and as "the Treatise on Glanders," in the estimation of every one except the author, "poor man!" does contain *many* "wrong applications of terms," and much "ambiguity of language," it shall never be supposed to contain any "sound pathology"—no, not the slightest particle. It is a sad conclusion; but the author, "poor man!" has said it, and against his dictum there can be no appeal. He has asserted that it would be "downright nonsense" to suppose otherwise; indeed, that "it cannot for a moment be imagined to be possible;" and so it must be! "Poor Man!!"

Mr. Vines now gives, at full length, a letter of Mr. Pritchard's, of Wolverhampton, commendatory of his treatment of glanders, and which will be found in the fifth volume of our Journal, page 80; and also one from Mr. Brett, of Bletchingly, which will be found in page 322 of the same volume, and which was inserted at the desire of Mr. Vines. Mr. Pritchard's letter, Mr. Vines informs us, was "in reply to some very improper insinuations which appeared in that journal a short time previously, from a person by the name of Karkeek." A person by the name by Karkeek! Really, Mr. Vines, you should know better. Is every one who cannot subscribe to your *creed* to be subjected to abuse, direct or implied?

To all the advantage which the approbation of these respectable gentlemen (Messrs. Pritchard and Brett) can procure, and, indeed, to the approbation of the profession generally, if he has been fortunate enough to obtain it, I cheerfully leave Mr. Vines; and I break off the consideration of his review, although the *misrepresentations* and *mis-statements* in the after part of it are fully as frequent and as flagrant as those I have cited: it was necessary, however, that he should be taught to feel that he may not act the literary ruffian with impunity.

Extracts.

Experiments on the Action of Emetic Tartar on Ruminants.

By M. Fleurens.

In a memoir read on a former occasion, before the Royal Academy of Sciences, M. Fleurens had established, by the aid of numerous experiments, that the act of vomiting in ruminants differs essentially from that of other animals, and particularly in this, that, instead of being, as in them, a rejection of indigested food, confused and in a mass, the matter returned is in regular and detached portions. This new memoir has for its object, to shew, that these two sorts of vomiting depend on the different construction of the stomachs; and to arrive, by means of this, at an explanation of that fact, so singular, and long ago observed, that the animals which regurgitate the most easily do not vomit without extreme labour, or do not vomit at all.

After having repeated the methods by which Daubenton, Gilbert, and Huzard, endeavoured to produce vomiting in sheep,

and shewn that his own experiments confirmed the results before obtained, namely, that this substance, administered in the food or drink, produced nothing that resembled vomiting, he announced that he had obtained effects as prompt as they were energetic, when, instead of introducing the emetic by means of deglutition, he had carried it directly into the fourth stomach, or had injected it into the veins.

In his first experiment, ten grains of emetic tartar, dissolved in water, were introduced into the veins. After some minutes the animal appeared very much distressed; to this succeeded efforts to vomit, that became more and more violent, and were followed, at different times, by a sort of interior vomiting; after which, the animal was for some minutes evidently engaged in swallowing it again. These efforts continued more than an hour, and never proceeded to a complete vomiting, is to say, a rejection from the mouth of substances previously swallowed. The emetic producing in sheep the same excitement of the stomach which it does in other animals; and provoking efforts of the same nature, yet without leading to vomiting, it was clear that this impossibility to vomit was to be traced to some particular structure, or sensibility, or want of sensibility, in the organs to which the stimulus had been applied.

The author accordingly occupied himself in endeavouring to discover, by means of direct experiment, on which of the stomachs the emetic acted; and he had recourse to the same proceeding that he had employed in tracing the different steps of the act of rumination, and which consisted in making an artificial passage to each of them. He observed, by means of this, that the three first stomachs presented only the general phenomena connected with rumination, and described in his former memoir; but it was not so with the fourth stomach;—in fact, he had scarcely made an opening into it, when the relaxed and soft rugæ of its interior unrolled themselves, and separated, and the animal appeared to be in the greatest distress, similar to that which followed the injection of the emetic into the veins, and, like that, was accompanied with swelling of the abdomen, and grinding of the teeth, and foaming at the mouth; and, in fine, the true efforts to vomit, but less violent than those that were produced by the emetic.

We have, then, a stomach, and one alone, the direct mechanical lesion of which will produce nearly the same symptoms as the injection of an emetic into the veins. But these effects, as the experiments of M. Fleurens will shew, are produced by the introduction of emetic tartar into the stomach; while nothing like it can be produced by the introduction of the same substance into either of the three other stomachs. Twenty grains of emetic

tartar have, on various occasions, been introduced, by means of the artificial passage into the first and second stomachs, but no immediate effect has ever been produced: we say immediate, because the consecutive effects, very feeble, which have sometimes been observed, depended evidently on the subsequent passage of this active substance into the fourth stomach. As to this fourth stomach, when the emetic tartar has been introduced into it, not directly, because we have seen that a mechanical lesion has produced effects analogous to those which resulted from the injection of the medicine into the veins, but by means of an artificial passage made in the nearest stomach (the maniplus), the symptoms already described have uniformly appeared, viz. swelling of the belly, grinding of the teeth, and attempts to vomit.

This point having been established, that it is on the fourth stomach, and the fourth stomach only, that the emetic acts, it is easy to explain why regurgitation is so easy, and vomiting so difficult, in these animals. It is because they are different stomachs that are acted upon in the production of these phenomena.

The two first stomachs are concerned in regurgitation, either directly or by means of the peculiar apparatus which they contain; and it is upon ueither the one nor the other of them that the emetic acts; but it does act on the fourth stomach, which has nothing at all to do with regurgitation.

When we examine the structure of the two first stomachs, and of the demi-canal of the œsophagus, that is to say, of the parts which are concerned in regurgitation, we see every thing disposed so as to facilitate the return of the food to the mouth: in the fourth stomach, on the contrary, every thing is arranged to render that return more or less difficult. Beside, that this stomach is the last of the whole, and that all kinds of matters rejected must traverse the other three, in order to arrive at the mouth: there is also at the opening by means of which it communicates with the maniplus, a fold more or less developed, and which answers, in a certain degree, the office of a valve, and this opposes itself to the rapid escape of the substances before which it is placed. Besides, the fourth stomach, pressed by the abdominal muscles and the diaphragm, cannot contract without the other stomachs and especially without the contraction of the maniplus, and that cannot contract without its upper opening becoming firmly closed. Finally, the fourth stomach being the softest, the most relaxed, and the least resistent of the four, it follows, that the compression of the abdominal muscles and the diaphragm will act less efficaciously on this stomach than on the others, and particularly than on the two first.

Every thing, then, is disposed in ruminants to render rejection from the two first stomachs easy; but rejection from the last, that is to say, true vomiting, difficult, yet not impossible, since some authors have assured us, that they have seen ruminants vomit.

However, the following remarks may be made on these cases, which are very rare:—First, that the vomiting always depended on some disease, which might have changed the natural relations of the parts; and secondly, that in every case that has been reported, the vomiting came from the paunch, and not from the fourth stomach; and that, consequently, it was not a true vomiting, but a simple ordinary rejection, although a vitiated one, of the contents of the paunch. If we recollect that this fourth stomach is that in which the definite conversion of the food into chyle is performed; that it contains that which has undergone the process of rumination, and which, consequently, ought not to return again to the mouth; and on the other hand, that the two first stomachs are those where the aliment is only submitted to a certain preparation; that they contain matters which have not been ruminated, and which, of consequence, must return to the mouth—we shall plainly see why every thing is arranged to render rejection easy from the two first stomachs, and very difficult from the fourth. Without this arrangement, in fact, the food which has been re-masticated, and has found its way to the fourth stomach, would be constantly mixed, confounded, and returned to the mouth with that which had not undergone this process; and a degree of confusion would ensue, incompatible with the accomplishment of that object which nature meant to effect by the act of rumination.

Récuéil Méd. Vét. Août 1833.

Miscellanea.

An American Horse-dealer.

It is not unusual to find Americans indulging a very flowery phraseology upon ordinary enough occasions. The following is an example of metaphoric flight:—Not long since, a British officer, in Kingston, was purchasing a horse from an American dealer. The various perfections having been descanted upon in such terms as are commonly in use; "Now, sir," quoth the Yankee, in language more replete with point than with propriety, "if you would have a horse to sleep upon, don't buy him; but if you would have a creature to carry you through hell without singeing the feather in your cap, there he stands."

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